

## 4. ACCIDENT AND EXPOSURE PREVENTION

Project activities will present numerous safety, physical, chemical, and radiological hazards to personnel conducting these tasks. It is critical that all personnel understand and follow the site-specific requirements of this HASP. Engineering controls, hazard isolation, specialized work practices, and the use of PPE will all be implemented to eliminate or mitigate all potential hazards and exposures where feasible. However, all personnel are responsible for the identification and control of hazards in their work area in accordance with Integrated Safety Management System (ISMS) principles and practices. **At no time will hazards be left unmitigated without implementing some manner of controls (e.g., engineering controls, administrative controls, or the use of PPE).** Project personnel should use stop work authority in accordance with PRD-1004 or MCP-553, “Stop Work Authority,” where it is perceived that imminent danger to personnel, equipment, or the environment exists.

This HASP is to be used in conjunction with INEEL PRD-25, “Activity Level Hazard Identification, Analysis, and Control,” and work authorization and control documents such as STD-101, “Integrated Work Control Process”; work orders; JSAs; MCP-3562, “Hazard Identification, Analysis, and Control of Operational Activities”; and operational TPRs. Where appropriate, MCP-3562 and GDE-6212, “Hazard Mitigation Guide for Integrated Work Control Process”; mitigation guidance; JSAs; and RWP will be incorporated into applicable sections of the HASP.

### 4.1 Voluntary Protection Program and Integrated Safety Management

ICP safety processes embrace the Voluntary Protection Program (VPP) and ISMS criteria, principles, and concepts to identify and mitigate hazards, thereby preventing accidents. All management and workers are responsible for implementing safety policies and programs and for maintaining a safe and healthful work environment. Project personnel are expected to take a proactive role in preventing accidents, ensuring safe working conditions for themselves and fellow personnel, and complying with all work control documents, procedures, and permits.

**ISMS** is focused on the **system** side of conducting operations and **VPP** concentrates on the **people** aspect of conducting work. Both programs define work scope, identify and analyze hazards, and mitigate the hazards. Additional information on these programs is available on the INEEL Intranet. Bechtel BWXT Idaho, LLC (current primary management and operating contractor) and its subcontractors participate in VPP and ISMS for the safety of their employees. This document includes all elements of both systems. The five key elements of VPP and ISMS and their corresponding HASP sections are

Voluntary Protection Program	Integrated Safety Management System	Health and Safety Plan Section
	Define work scope	Section 1
Work site analysis	Analyze hazards	Sections 2, 3, 5, 7, 10
Hazard prevention and control	Develop and implement controls	Sections 2, 3, 4, 5, 7, 10, 11
Safety and health training	Perform within work controls	Section 6
Employee involvement	Perform within work controls	Sections 2, 3, 4, 8
Management leadership	Provide feedback and improvement	Sections 6, 9

## 4.2 General Safe Work Practices

Sections 1 and 2 defined the project scope of work and associated project-specific hazards and mitigation. The following practices are mandatory for all project personnel to further reduce the likelihood of accidents and injuries. All visitors permitted to enter work areas must follow these requirements. Failure to follow these practices may result in permanent removal from the project and other disciplinary actions. The project FTL/STR and HSO will be responsible to ensure that the following safe-work practices are adhered to at the project site:

- Limit work area access to authorized personnel only, in accordance with PRD-1007, “Work Coordination and Hazard Control,” and Section 7.
- All personnel have the authority to initiate STOP WORK actions in accordance with PRD-1004, or MCP-553.
- Personnel will not eat, drink, chew gum or tobacco, smoke, apply sunscreen, or perform any other practice that increases the probability of hand-to-mouth transfer and ingestion of materials in work areas, except within designated areas.
- Be aware of and comply with all safety signs, tags, barriers, and color codes as identified in accordance with PRD-2022, “Safety Signs, Color Codes, and Barriers,” or PRD-5117, “Accident Prevention Signs, Tags, Barriers, and Color Codes.”
- Be alert for dangerous situations, strong or irritating odors, airborne dusts or vapors, and spills. Report all potentially dangerous situations to the FTL/STR or HSO.
- Avoid direct contact with hazardous materials or wastes. Personnel will not walk through spills or other areas of contamination and will avoid kneeling, leaning, or sitting on equipment or surfaces that may be contaminated.
- Be familiar with the physical characteristics of the project site and/or facility, including, but not limited to:
  - Prevailing wind direction
  - Location of fellow personnel, equipment, and vehicles
  - Communications at the project site and with INTEC
  - Area and the type of hazardous materials stored and waste disposed of there
  - Major roads and means of access to and from the project site
  - Location of emergency equipment
  - Warning devices and alarms for area or facility
  - Capabilities and location of nearest emergency assistance.

- Report all broken skin or open wounds to the operations manager, FTL/STR, or HSO. An OMP physician must examine all wounds to determine the nature and extent of the injury. If required to enter into a radiological contamination area, a RadCon supervisor will determine whether the wound can be bandaged adequately in accordance with Article 542 of the Manual 15A, “INEEL Radiological Control Manual” (PRD-183).
- Prevent releases of hazardous materials. If a spill occurs, personnel must try to isolate the source (if possible and if this does not create a greater exposure potential) and then report it to the FTL/STR, or HSO. The Warning Communications Center (WCC) or INTEC shift supervisor or technical lead will be notified and additional actions will be taken, as described in Section 10. Appropriate spill response kits or other containment and absorbent materials will be maintained at the project site.
- Illumination levels during project tasks will be in accordance with 29 CFR 1910.120 (Table H-120.1, “Minimum Illumination Intensities in Foot-Candles”).
- Ground-fault protection will be provided whenever electrical equipment is used outdoors.
- Keep all ignition sources at least 15 m (50 ft) from explosive or flammable environments and use nonsparking, explosion-proof equipment, if advised to do so by safety professionals.
- Follow all safety and radiological precautions and limitation of TPRs and requirements identified in work packages.

### 4.3 Subcontractor Responsibilities

Subcontractors are responsible for meeting all applicable INEEL MCP, PRD, VPP, and ISMS flow-down requirements such as those listed on the completed INEEL Form 540.10, “Subcontractor Requirements Manual (SRM) Applicability”; “Subcontractor Requirements Manual” (TOC-59); and contract general and special conditions. Additionally, subcontractors are expected to take a proactive role in hazard identification and mitigation while conducting project tasks, and report unmitigated hazards to the appropriate project point of contact after taking mitigative actions within the documented work controls.

Subcontractors shall follow the equipment manufacturer’s preventive maintenance recommendations and instructions, safe operating instructions, and other industry standard safe work practices for the equipment.

### 4.4 Radiation and Chemical Exposure Prevention

Exposure to potential chemical, radiological, and physical hazards will be mitigated by using engineering controls, administrative controls, or PPE to prevent exposures where possible or minimize them where engineering controls are not feasible. All project personnel are responsible for understanding the hazard identification and mitigation measures necessary to prevent exposures.

#### 4.4.1 Radiation Exposure Prevention – As Low as Reasonably Achievable Principles

Radiation exposure of project personnel will be controlled such that radiation exposures are well below regulatory limits and that there is no radiation exposure without commensurate benefit. **Unplanned and preventable exposures are considered unacceptable.** All project tasks will be evaluated with the

goal of eliminating or minimizing exposures. All project personnel are responsible to follow the ALARA principles and practices, and personnel working at the site must strive to keep both external and internal radiation doses ALARA by adopting the following practices discussed in the next two sections.

**4.4.1.1 External Radiation Dose Reduction.** Sources for external radiation exposure at the OU 3-13, Group 3 project sites include contaminated soils and materials. Radiological work permits will be written as required for project tasks that will define hold points, required dosimetry, RCT coverage, radiological areas, and radiological limiting conditions in accordance with MCP-7, “Radiological Work Permit.” Radiological control personnel will participate in the prejob briefing required by MCP-3003, “Performing Prejob Briefings and Postjob Reviews,” to ensure all personnel understand the limiting conditions on the RWP. All personnel will be required to read and acknowledge the RWP requirements before being allowed to sign the RWP (or scan the RWP bar code) and obtain electronic dosimetry, if required.

Basic protective measures used to reduce external doses include (1) minimizing time in radiation areas, (2) maximizing the distance from known sources of radiation, and (3) using shielding whenever possible. The following are methods to minimize external dose:

#### ***Methods for Minimizing Time***

- Plan and discuss the tasks before entering a radiation area (including having all equipment and tools prepared).
- Perform as much work as possible outside radiation areas and take advantage of lower dose rate areas (as shown on the radiological survey maps).
- Take the most direct route to the tasks and work efficiently.
- If problems occur in the radiation areas, hold technical discussions outside radiation areas, then return to the work area to complete the task.
- If stay times are required, know your stay time and use appropriate signal and communication methods to let others in the area know when the stay time is up.
- Respond to electronic dosimetry alarms by notifying others in the area and the RCT and exiting the radiation area through the designated entry and exit point.
- Know your current dose and your dose limit. **DO NOT EXCEED YOUR DOSE LIMIT.**

#### ***Methods for Maximizing Distance from Sources of Radiation***

- Use remote-operated equipment or controls where required
- Stay as far away from the source of radiation as possible (extremely important for point sources where, in general, if the distance between the source is doubled, the dose rate falls to one-fourth of the original dose rate)
- Become familiar with the radiological survey map for the area in which work will be performed, as well as high- and low-dose-rate locations, and take advantage of low-dose-rate areas.

### ***Proper Use of Shielding***

- Know what shielding is required and how it is to be used for each radiation source
- Take advantage of the equipment and enclosures for shielding yourself from radiation sources
- Wear safety glasses to protect eyes from beta radiation.

**4.4.1.2 Internal Radiation Dose Reduction.** An internal radiation dose potential exists at the OU 3-13, Group 3 project sites from inhalation of contaminated material. An internal dose is the result of radioactive material being taken into the body. Radioactive material can enter the body through inhalation, ingestion, absorption through wounds, or injection from a puncture wound. Reducing the potential for radioactive material to enter the body is critical to avoid an internal dose. The following are methods to minimize internal radiation dose hazard:

- Know the potential and known contamination sources and locations, and minimize or avoid activities in those areas
- Wear protective clothing and respiratory protection as identified on the RWP, perform all respirator leak checks, and inspect all PPE before entering contaminated areas or areas with airborne radioactivity
- Use a high-efficiency particulate air (HEPA) filter exhaust system
- When inside contaminated areas, do not touch your face (adjust glasses or PPE) or other exposed skin
- When exiting contaminated areas, follow all posted instructions and remove PPE in the order prescribed (if questions arise, consult RadCon personnel)
- Conduct whole body personnel survey when exiting the contaminated area, then proceed directly to the personnel contamination monitor
- Report all wounds or cuts (including scratches and scrapes) before entering radiologically contaminated areas
- Wash hands and face before eating, drinking, smoking, or engaging in other activities that may provide a pathway for contaminants.

Monitoring for radiation and contamination during project tasks will be conducted in accordance with the RWP; PRD-183, "Radiation Protection - INEEL Radiological Control Manual"; Manual 15B, "Radiation Protection Procedures"; and Manual 15C, "Radiological Control Procedures"; and as deemed appropriate by RadCon personnel.

#### 4.4.2 Chemical and Physical Hazard Exposure Avoidance

**Note:** Identification and control of exposures to carcinogens will be conducted in accordance with MCP-2703, “Carcinogens.”

Threshold-limit values (TLVs) or other occupation exposure limits have been established for numerous chemicals and physical agents (e.g., noise, heat, or cold stress) that may be encountered. These exposure limits provide guidelines for evaluating airborne, skin, and physical agent exposures. The TLVs represent levels and conditions to which it is believed that nearly all workers may be exposed day after day without adverse health effects. The TLV-time-weighted average (TLV-TWA) is a time-weighted average concentration for a conventional 8-hour workday and a 40-hour workweek, to which it is believed that nearly all workers may be repeatedly exposed, day after day, without adverse health effects. Action limits (instantaneous concentrations for short time periods) have been established (Section 3) to further reduce the likelihood of exceeding TLVs.

Controls will be employed to eliminate or mitigate chemical and physical hazards wherever feasible. The hierarchy of controls in order are (1) engineering controls, (2) administrative controls, and (3) PPE. In addition to these controls, use of TPRs and work orders, hold points, training, and monitoring of hazards will be used as appropriate to reduce exposure potential. Some methods of exposure avoidance include

- Wearing all required PPE, inspecting all pieces before donning, and taping all seams
- Changing PPE if it becomes damaged or shows signs of degrading
- Minimizing time in direct contact with hazardous material or waste
- Doffing PPE following standard practices (i.e., rolling outer surfaces in and down) and following doffing sequence
- Washing hands and face before eating, drinking, smoking, or engaging in other activities that may provide a pathway for contaminants.

### 4.5 Buddy System

The two-person or buddy system will be used during project tasks. The buddy system is most often used during project activities requiring the use of protective clothing and respiratory protection where heat stress and other hazards may impede a person’s ability to self-rescue. The buddy system requires each employee to assess and monitor his or her buddy’s mental and physical well being during the course of the operation. A buddy must be able to perform the following activities:

- Provide assistance if required
- Verify the integrity of PPE

- Observe his or her buddy for signs and symptoms of heat stress, cold stress, or contaminant exposure
- Notify other personnel in the area if emergency assistance is needed.

The buddy system will be administered by the FTL/STR in conjunction with the HSO.





## 5. PERSONAL PROTECTIVE EQUIPMENT

This section provides guidance for the selection and use of PPE to be worn for project tasks and contingencies for upgrading and downgrading PPE. Types of PPE are generally divided into two broad categories: (1) respiratory protective equipment and (2) nonrespiratory PPE. Both of these categories are incorporated into the standard two level of protection (Levels C and D).

The purpose of personal protective clothing and equipment is to shield or isolate individuals from the chemical, physical, radiological, and safety hazards that may be encountered during project tasks when engineering and other controls are not feasible or cannot provide adequate protection. It is important to realize that no one PPE ensemble can protect against all hazards under all conditions and that proper work practices and adequate training will serve to augment PPE to provide the greatest level of protection to workers.

Project field workers wear, as a minimum, sturdy leather boots above the ankles, safety glasses with side shields, hard hats, and highly reflective safety vests. The HSO or safety professional will determine where and when this requirement will be invoked for each project.

The type of PPE will be selected, issued, used, and maintained in accordance with PRD-2001 or PRD-5121. Selection of the proper PPE is based on the following considerations:

- Specific conditions and nature of the tasks (e.g., contaminated soil or material removal)
- Potential contaminant routes of entry
- Physical form and chemical characteristics of hazardous materials, chemicals, or waste
- Toxicity of hazardous materials, chemicals, or waste that may be encountered
- Duration and intensity of exposure (acute or chronic)
- Compatibility of chemical(s) with PPE materials and potential for degradation or breakthrough
- Environmental conditions (e.g., humidity, heat, cold, rain)
- The hazard analysis.

If radiological contamination is encountered at levels requiring the use of anti-contamination (Anti-C) clothing, a task-specific RWP will be developed and MCP-432 will be followed.

The PPE requirements for specific project tasks are identified in Table 5-1. This list may be augmented by an SWP or RWP. Potential exposures and hazards will be monitored (as discussed in Section 3) during the course of the project to evaluate changing conditions and to determine PPE level adequacy and modifications.

Level D is anticipated to be the initial level of PPE used for tasks except equipment decontamination. IH or RadCon personnel may change these requirements based on changing site conditions or increased potential for exposure.

Table 5-1. Task-based personal protective equipment requirements and modifications.

Task	Initial Level of Personal Protective Equipment	Upgrade Contingency	Downgrade Contingency	Upgrade or Downgrade Criteria	Personal Protective Equipment Modifications and Comments
Waste soil loading	D+	C	D	Upgrade to Level C if airborne concentrations exceed action limits.  Downgrade to Level D if contact with waste containers can be avoided or surveys show no detectable contamination on surfaces.	Level C respiratory protection defined by industrial hygienist, based on airborne contaminant.  Leather gloves for all material handling tasks.
Waste transport at work site	D	D+	Not applicable	Upgrade to Level D+ when attaching or removing straps if contamination is detected on the outside of waste containers.	D+ protective clothing consists of Tyvek hooded coveralls (or equivalent).  Leather gloves.
Excavation of contaminated soils or materials	D+	C	D	Upgrade to Level C if airborne levels exceed action limits.  Downgrade to Level D if contact with waste containers can be avoided or surveys show no detectable contamination on surfaces.	Level C respiratory protection defined by industrial hygienist, based on airborne contaminant.  Leather gloves for all material handling tasks.
Heavy equipment operations	D	D+	Not applicable	Upgrade to Level D+ if contact with waste material cannot be avoided.	D+ protective clothing consists of Tyvek hooded coveralls (or equivalent).  Leather gloves.
Backfilling excavations with “clean” material	D	C	Not applicable	Upgrade to Level C (appropriate respiratory protection only) if airborne concentrations of respirable dust or silica exceed the action limits.	Level C respiratory protection defined by industrial hygienist, based on airborne contaminant.  Level C protective clothing consists of Tyvek hooded coveralls (or equivalent).  Leather gloves for all material handling tasks.

Table 5-1. (continued).

Task	Initial Level of Personal Protective Equipment	Upgrade Contingency	Downgrade Contingency	Upgrade or Downgrade Criteria	Personal Protective Equipment Modifications and Comments
Equipment decontamination	C	C+	D+	<p>Upgrade to Level C+ if splashing during decontamination of lead, cadmium, radiologically contaminated equipment cannot be avoided.</p> <p>Downgrade to Level D+ for decontamination of small items using spray and wipe decontamination methods.</p>	<p>Level C respiratory protection defined by industrial hygienist, based on airborne contaminant.</p> <p>Level C protective clothing consists of Tyvek (or equivalent) hooded coverall.</p> <p>Level C+ protective clothing consists of Saranex (or equivalent coated hooded coverall).</p> <p>Leather gloves over nitrile for equipment and material handling before or after decontamination tasks.</p> <p>Double-pair nitrile gloves during decontamination tasks.</p>

## **5.1 Respiratory Protection**

When controlling occupational diseases caused by breathing contaminated air, the primary objective will be to prevent atmospheric contamination. This will be accomplished as far as feasible by accepted engineering control measures (e.g., enclosure or confinement of the operation, general and local ventilation, and substitution of less toxic materials). When effective engineering controls are not feasible or while they are being instituted, appropriate respiratory protection will be selected and used.

Required task-based respiratory protection and protective clothing are listed on Table 5-1. Respirators are not anticipated to be required for specific project tasks. All personnel required to wear respirators will complete training and be fit-tested before being assigned a respirator in accordance with the training and documentation requirements in Section 6. Requirements for respirator use, emergency use, storage, cleaning, and maintenance, as stated in 29 CFR 1910.134, "Respiratory Protection"; PRD-2109, "Respiratory Protection"; and the MCP-2726, "Respiratory Protection," will be followed.

## **5.2 Personal Protective Equipment Levels**

Table 5-2 lists PPE requirements for the two levels of PPE that may be worn during the course of the project. Applicable PPE levels (D or C) will be required for conducting project tasks. Modifications to these levels will be made under the direction of the HSO in consultation with the project Industrial Hygiene and RadCon personnel, as appropriate. Such modifications are routinely employed during HAZWOPER site activities to maximize efficiency and to meet site-specific needs without compromising personnel safety and health.

### **5.2.1 Level D Personal Protective Equipment**

Level D PPE includes, at a minimum, hard hat, safety glasses, sturdy leather boots, and a highly visible reflective vest (during heavy equipment operation). It may also include hand protection, coveralls, safety footwear, and radiological modesty garments in addition to specialized PPE (hearing protection, heavy aprons, welding goggles, etc.).

Level D PPE will only be selected for protective clothing and not on a site with respiratory or skin absorption hazards requiring whole-body protection. Level D PPE provides no protection against airborne chemical hazards, but rather is used for protection against surface contamination and physical hazards. Level D PPE will only be allowed in areas that have been characterized as having limited contamination hazards.

### **5.2.2 Level C Personal Protective Equipment**

Level C PPE will be worn when the work site chemical or radiological contaminants have been well-characterized, indicating that personnel are protected from airborne exposures by wearing an air-purifying respirator with the appropriate cartridges, that no oxygen-deficient environments exist (less than 19.5% at sea level), and that there are no conditions that pose immediate danger to life or health (IDLH).

Table 5-2. Levels and options of personal protective equipment.

Personal Protective Equipment Level	Personal Protective Equipment Required	Optional Personal Protective Equipment or Modifications
D	<p>Coveralls or standard work clothes (coverall material type based on industrial hygiene determination).</p> <p>Hard hat (unless working indoors with no overhead or falling debris hazards) meeting ANSI Z89.1 requirements.</p> <p>Eye protection (safety glasses meeting ANSI Z87.1 requirements as a minimum).</p> <p>Hand protection (material based on type of work and hazardous materials being handled).</p> <p>Safety footwear (steel or protective toe and shank) meeting ANSI Z41 requirements or sturdy leather above the ankle for construction tasks.</p>	<p>Chemical or radiological protective clothing (Tyvek or Saranex) specified by industrial hygienist or RCT.</p> <p>Chemically resistant hand and foot protection (e.g., inner and outer gloves and boot liners).</p> <p>Radiological modesty garments under outer protective clothing (as required by radiological work permit [RWP]).</p> <p>Any specialized protective equipment (e.g., hearing protection, cryogenic gloves, face shields, welding goggles, and aprons).</p>
C	<p>Level D ensemble with the following respiratory and whole-body protection upgrades:<sup>a</sup></p> <ul style="list-style-type: none"> <li>Full-facepiece air purifying respirator equipped with a NIOSH-approved HEPA filter or chemical combination cartridge (industrial hygienist to specify cartridge type)</li> </ul> <p>OR</p> <ul style="list-style-type: none"> <li>An air hood operating at a minimum pressure of 6 cfm or a full-facepiece supplied air respirator with a 10-minute escape bottle, a self-contained breathing apparatus (SCBA) or an escape air-purifying combination HEPA or chemical cartridge (supplied air respirator hose length no more than manufacturer's specification and under no circumstances greater than 91 m [300 ft])</li> <li>Standard Tyvek (or equivalent) coverall</li> </ul> <p>OR</p> <ul style="list-style-type: none"> <li>Chemical-resistant coveralls (e.g., Tyvek QC, Tychem 7500, or Saranex-23-P) (industrial hygienist to specify material).</li> </ul>	<p>Chemical-resistant outer shoe or boot cover (industrial hygienist or RCT to specify material).</p> <p>Inner chemical-resistant gloves with cotton liners (as determined by the industrial hygienist and RWP).</p> <p>Outer chemical-resistant gloves (as determined by the industrial hygienist).</p> <p>Radiological modesty garments under outer protective clothing (as required by RWP).</p> <p>Any specialized protective equipment (e.g., hearing protection, welding lens, and aprons).</p>
B <sup>b</sup>	This ensemble is not expected to be needed.	
A <sup>b</sup>	This ensemble is not expected to be needed.	

a. Upgrades are determined by the industrial hygienist in conjunction with other environment, safety, and health professionals.

b. Level B and A work will require approval from the Idaho Closure Project safety, health, and quality assurance manager and coordination with the INEEL fire department.

**Note:** Personnel must inspect all PPE before donning and entry into any work zone. Items found to be defective or that become unserviceable during use will be doffed and disposed of in accordance with posted procedures and placed into the appropriate waste stream. The PPE inspection guidance is provided in Table 5-3.

### 5.2.3 Level B Personal Protective Equipment

Level B PPE will be worn when personnel cannot be adequately protected with air purifying respirator because there are high levels of contaminants present, the appropriate respirator cartridges or combination is not available, a significant hazard exists for skin exposure, or IDLH or oxygen-deficient conditions exist. If IDLH conditions do not exist, then an escape air-purifying cartridge may be substituted for the escape bottle. It is anticipated that Level B PPE will not be needed for OU 3-13, Group 3, Other Surface Soils, remediation operations.

### 5.2.4 Level A Personal Protective Equipment

Level A PPE has the maximum respiratory, skin, and eye protection and is suitable for use in situations where (1) the levels of contaminants are known to be very high and dangerous, (2) corrosive agents exist, (3) contaminant levels are completely unknown, or (4) an IDLH situation exists or such conditions could develop. It is anticipated that Level A PPE will not be needed for OU 3-13, Group 3, Other Surface Soils remediation operations.

Table 5-3. Inspection checklist for personal protection equipment.

Personal Protection Equipment Item	Inspection
Respirators (full-facepiece air-purifying)	<p>Before use:</p> <p>Check condition of the facepiece, head straps, valves, connecting lines, fittings, and all connections for tightness.</p> <p>Check cartridge to ensure proper type or combination is being used for atmospheric hazards to be encountered, and inspect threads and O-rings for pliability, deterioration, and distortion.</p>
Level D and C clothing	<p>Before use:</p> <p>Visually inspect for imperfect seams and tears.</p> <p>Hold PPE up to the light and inspect for pinholes, deterioration, stiffness, and cracks.</p> <p>While wearing in the work zone:</p> <p>Inspect for evidence of chemical attack such as discoloration, swelling, softening, and material degradation.</p> <p>Inspect for tears, punctures, and zipper or seam damage.</p> <p>Check all taped areas to ensure they are still intact.</p>
Gloves	<p>Before use:</p> <p>Pressurize rubber gloves to check for pinholes: blow in the glove, then roll until air is trapped and inspect. No air should escape.</p> <p>Leather gloves:</p> <p>Inspect seams and glove surface for tears and splitting and verify no permeation has taken place.</p>

## **5.3 Personal Protective Clothing Upgrading and Downgrading**

The project HSO, in consultation with the project industrial hygienist and RadCon personnel, will be responsible for determining when to upgrade or downgrade PPE requirements. Upgrading or downgrading of PPE based on changing site conditions or activities is a normal occurrence. Action levels listed in Table 3-2 serve as the initial basis for making such decisions. Additional reasons for upgrading or downgrading are listed in the following sections.

### **5.3.1 Upgrading Criteria for Personal Protective Equipment**

The level of PPE required will be upgraded for the following reasons and work will halt until PPE upgrading has been completed:

- Identification of new, unstable, or unpredictable site hazards
- Temporary loss or failure of any engineering controls
- Presence of contaminants that present difficulty in monitoring or detecting
- Known or suspected presence of skin absorption hazards
- Identified source or potential source of respiratory hazard(s) not anticipated
- Change in the task procedure that may result in an increased contact with contaminants or meeting any of the criteria listed above.

### **5.3.2 Downgrading Criteria**

The level of PPE will be downgraded under the following conditions:

- Elimination of hazard or completion of task(s) requiring specific PPE
- Implementation of new engineering or administrative controls that eliminate or significantly mitigate hazard
- Sampling information or monitoring data that show the contaminant levels to be stable and lower than established action limits
- Elimination of potential skin absorption or contact hazards.

## **5.4 Inspection of Personal Protective Equipment**

All PPE ensemble components must be inspected before use and when in use within project work zones. Self-inspection and the use of the buddy system, once PPE is donned, will serve as the principal forms of inspection. If PPE should become damaged or degradation or permeation is suspected, the individual wearing the PPE will inform others of the problem and proceed directly to the work zone exit point to doff and replace the unserviceable PPE. In addition, all PPE that becomes grossly contaminated or presents a potential source for the spread of such contamination will be required to be decontaminated

or replaced. Table 5-3 provides an inspection checklist for common PPE items. Where specialized protective clothing or respiratory protection is used or required, the manufacturer's inspection requirements, in conjunction with regulatory or industry inspection practices, will be followed. Consult the project industrial hygienist, safety professional, and RCT about PPE inspection criteria.



## **6. PERSONNEL TRAINING**

All ICP personnel will receive training, as specified in 29 CFR 1910.120, 29 CFR 1926.65, and ICP company-wide manuals as applicable. Table 6-1 summarizes the project-specific training requirements for personnel-based access requirements, responsibilities at the project site, potential hazards, and training level requirements.

Modifications (e.g., additions or eliminations) to training requirements listed in Table 6-1 may be necessary based on changing field conditions. Any changes to the requirements listed in Table 6-1 must be approved by the HSO, with concurrence from the FTL/STR, project manager, RCT, and industrial hygienist, as applicable. These changes should be based on site-specific conditions and will generally be considered a minor change to the HASP, as defined by instructions on Form 412.11, "Document Management Control Systems (DMCS) Document Action Request (DAR)," because they are administrative in nature.

### **6.1 General Training**

All project personnel are responsible for meeting training requirements including applicable refresher training. Evidence of training will be maintained at the project site, field administrative location, or electronically (e.g., Training Records and Information Network [TRAIN] [<http://train1.inel.gov/index.html>]). Nonfield team personnel and visitors must be able to provide evidence of meeting required training for the area of the site they wish to access before being allowed in. As a minimum, all personnel who access project locations must receive a site-specific briefing, are required to wear PPE, and must provide objective evidence of having completed INEEL computer-based PPE training (00TRN288, "Personal Protective Equipment") or equivalent, in accordance with 29 CFR 1910.132, "General requirements."

### **6.2 Project-Specific Training**

Before beginning work at the project site, field team members will receive project-specific HASP training conducted by the HSO (or designee). This training will consist of a complete review of (1) the project HASP, attachments, and document action requests; (2) applicable JSAs, RWPs, and SWPs (if required); (3) work orders; and (4) other applicable work control and work authorization documents, with time for discussion and questions. Project-specific training can be conducted in conjunction with, or separate from, the required formal prejob briefing (MCP-3003).

At the time of project-specific HASP training, personnel training records will be checked and verified to be current and complete for all the training requirements shown in Table 6-1. Additional training may be required due to changed conditions or exposure risks (e.g., elevated sample results for beryllium, asbestos). After the HSO (or designee) has completed the site-specific training, personnel will sign Form 361.25, "Group Read and Sign Training Roster," or equivalent, indicating that they have received this training; understand the project tasks, associated hazards, and mitigations; and agree to follow all HASP and other applicable work control and safety requirements. Form 361.25 (or equivalent) training forms are available on the INEEL Intranet under "Forms."

Table 6-1. Required project-specific training.

Required Training	Field Team Leader, Health and Safety Officer, and Samplers	Other Field Team Members	Access into the Designated or Controlled Work Area, or Contamination Reduction Zone	Visitor Access to Project Areas Outside Designated or Controlled Work Area, or Contamination Reduction Zone
40-hour hazardous waste operations (HAZWOPER) - operations	Yes <sup>a</sup>	Yes <sup>a</sup>	Yes <sup>a,b</sup>	
24-hour HAZWOPER - operations				Yes <sup>a,b</sup>
HAZWOPER supervisor	Yes <sup>c</sup>	c		
Project-specific health and safety plan briefing	Yes <sup>d</sup>	Yes <sup>d</sup>	Yes <sup>d</sup>	
Project-site orientation briefing				Yes <sup>e</sup>
INEEL Site access (blue card) or equivalent construction site access training (orange card)	Yes <sup>f</sup>	Yes <sup>f</sup>	Yes <sup>f</sup>	Yes <sup>f</sup>
JSA briefing	Yes	Yes	Yes	e
Prejob briefings and postjob reviews (00TRN732)	Yes <sup>c</sup>	c		
Prejob briefing performance evaluation (00TRN754)	Yes <sup>c</sup>	c		
Use of PPE (00TRN288)	Yes	Yes	Yes	Yes
Noise awareness	g	g	g	g
Heat stress training (00TRN606)	Yes	Yes	Yes	e
Working in hazardous temperatures - cold stress (SMTT0010)	Yes	Yes	Yes	e
DOE Radiological Worker II/ Radiological Worker I/General Employee Radiological Training	Yes <sup>h</sup>	Yes <sup>h</sup>	Yes <sup>h</sup>	Yes <sup>h</sup>
Fire extinguisher training (or equivalent)	c	c		
Cardiopulmonary resuscitation, medic first-aid	c	c		
Respirator training (contingency only)	i	i		

Table 6-1. (continued).

Required Training	Field Team Leader, Health and Safety Officer, and Samplers	Other Field Team Members	Access into the Designated or Controlled Work Area, or Contamination Reduction Zone	Visitor Access to Project Areas Outside Designated or Controlled Work Area, or Contamination Reduction Zone
Lead and cadmium awareness training	Yes <sup>g</sup>	Yes <sup>g</sup>	g	
Excavation competent person	c	c		
<p>Note 1: Shaded fields indicate specific training is not required or applicable.</p> <p>Note 2: Supervised field experience is only required if personnel have not previously completed this training at another CERCLA (42 USC § 9601) site (documented) or they are upgrading from 24- to 40-hour HAZWOPER training. A copy of the training record must be kept at the project site as evidence of training or be available electronically.</p> <p>Note 3: Completed training project forms (Form 361.47, or equivalent) should be submitted to the Idaho Closure Project training coordinator for inclusion in the Training Records and Information Network system within 5 working days of completion.</p> <p>a. Includes 8-hour hazardous waste operations (HAZWOPER) refresher training annually and supervised field experience as follows: 40-hour HAZWOPER = 24-hour supervised field experience and 24-hour HAZWOPER = 8-hour supervised field experience).</p> <p>b. 40-hour or 24-hour HAZWOPER training requirement will be determined by the HSO based on the nature of the project tasks and potential for exposure to contaminants or safety hazards.</p> <p>c. At least one trained person onsite when field team is working and the health and safety officer will determine appropriate number of personnel requiring training.</p> <p>d. Includes project-specific hazards communications (29 CFR 1910.120), site-access and security, decontamination and emergency response actions, as required by 29 CFR 1910.120(e).</p> <p>e. Orientation includes briefing of site hazards, designated work areas, emergency response actions, and PPE requirements. Personnel receiving project-site orientation briefing only are limited to the areas outside designated work areas and must be escorted by a project supervisor or designee who is fully trained on the requirements of the health and safety plan.</p> <p>f. Work locations outside a facility boundary require additional training including unexploded ordinance recognition training (00TRN803) briefing and site access training (blue or orange card).</p> <p>g. Only if entering areas where initial exposure determination indicates exposure above the action limit is possible.</p> <p>h. As required, based on project duties and/or site zone access requirements, escort requirements.</p> <p>i. Only required if entering area requiring respiratory protection (e.g., action levels exceeded or the industrial hygienist sampling shows respirators required).</p>				

Personnel exposed to lead shall complete an appropriate level of training based upon the level of exposure and exposure frequency defined in Table 6-2.

Table 6-2. Training requirements for employees occupationally exposed to lead.

Level of Exposure	Training Required	Frequency
Incidental, works with solid lead, or exposure < action level on any day	Awareness Training (TRN 225)	Initial (prior to job assignment); when work coordinator or job supervisor determines that retraining or additional training is necessary
Exposure $\geq$ action level on any day OR works with lead compounds which may cause skin or eye irritation	Worker Training (TRN 35)	Initial (prior to job assignment); annually

Figure 6-1 identifies training requirements for entering or conducting work in CERCLA-regulated areas based on the potential for personnel exposure. A trained HAZWOPER 8-hour supervisor (HSO or other person who has been trained by the HAZWOPER supervisor) will monitor the performance of each newly 24- or 40-hour trained worker to meet the 1 or 3 days of supervised field experience, respectively, in accordance with 29 CFR 1910.120(e) or 29 CFR 1926.65(e). Following the supervised field experience period, the supervisor will complete Form 361.47, “HAZWOPER Supervised Field Experience Verification,” or equivalent, to document the supervised field experience. Form 361.47 is also required for all project 24- or 40-hour trained personnel who do not have documentary evidence of completing the 1- or 3-day supervised field experience.

### 6.3 Prejob Briefings and Postjob Reviews

Formal prejob briefings and postjob reviews will be conducted as required in MCP-3003. Each individual tasked with conducting a prejob briefing or postjob review will be fully qualified in accordance with MCP-3003.

### 6.4 Plan-of-the-Day Briefing, Feedback, and Lessons Learned

A daily plan-of-the-day (POD) or equivalent meeting will be conducted by the FTL/STR or designee. During this meeting, daily tasks are to be outlined; hazards identified; hazard controls, mitigation, and work zones established; PPE requirements discussed; and feedback from personnel solicited. At the completion of this meeting, any new work control documents will be reviewed and signed (e.g., SWP, JSA, or RWP).

Particular emphasis will be placed on lessons learned from the previous workday’s activities and how tasks can be completed in the safest, most efficient manner. All personnel are encouraged to contribute ideas to enhance worker safety and mitigate potential exposures at the project sites. This POD will be conducted as an informal meeting and the only required record will be to document the completion of the POD in the FTL logbook.

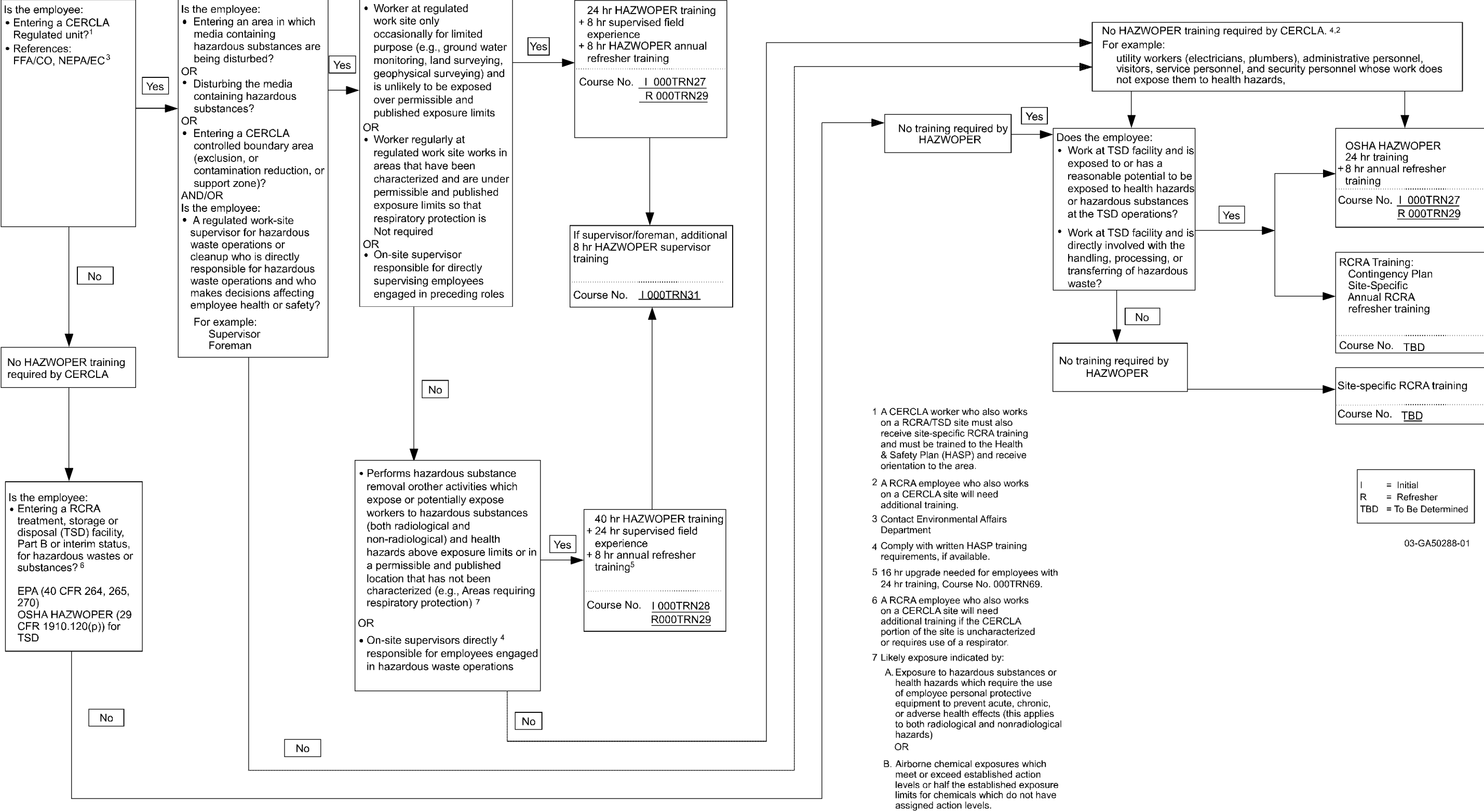


Figure 6-1. Model identifying employees requiring HAZWOPER training at CERCLA sites.

Safety and health topic-specific training or safety meetings may also be conducted during the course of the project to reinforce key safety topics. They may be conducted by project safety and the industrial hygienist or any field team member and should be performed in conjunction with the POD. Credit for a safety meeting can be received for such topic-specific training if a tailgate training form (INEEL Form 361.24, “Tailgate Attendance Roster”) or equivalent is completed and submitted to the appropriate training coordinator for entry into TRAIN.

**Note:** If a formal MCP-3003 prejob briefing is conducted during the work shift, a POD is not required.

## 7. SITE CONTROL AND SECURITY

Site control and security will be maintained at the project site during all activities to prevent unauthorized personnel from entering the work area. Entry into and exit out of these areas will be controlled through the appropriate use of barriers, signs, and other measures in accordance with PRD-2022 or PRD-5117. All unauthorized entry shall be reported to the project HSO who will report this information directly to the project manager and INTEC shift supervisor.

The HSO shall be consulted regarding equipment layout at the project site (in conjunction with the subcontractor superintendent for subcontractor-owned equipment) to minimize personnel hazards from equipment. The focus should be on equipment with stored energy (electrical, pressurized systems, elevated materials/equipment, chemical), moving and rotating parts (equipment that is guarded and that has open rotating parts such as a drill rig), and other equipment with the potential to result in personnel injuries from being struck-by, caught-between, or entangled in such equipment. The layout at the project site of equipment should reflect the nature of the hazard presented and should be mitigated through the use of engineering controls (barriers, guards, isolation), administrative controls (roped off restricted areas or controlled entry access), and qualifications of operators and those assisting in the operation of the equipment, when required.

Good housekeeping will be maintained at all times during the course of the project to include maintaining working and walking surfaces to minimize tripping hazards, stacking or storing materials and equipment in a centralized location when not in use, and regular cleanup of debris and trash that may accumulate at the project site.

Based on the nature of the project tasks to be completed, a graded approach with two types of site control designations will be used based on the potential hazards, complexity of work tasks, and duration of project tasks. These are areas where the primary safety hazards have little to no chance of exceeding the action limits. The two types of work areas are

- Designated work areas (DWAs), established for low-hazard routine tasks (e.g., waste sampling and packaging)
- Controlled work areas (CWAs), established for higher hazard tasks (e.g., contaminated soil and material removal).

The primary differences between the work areas will be the size of the area, method of delineation, and postings as determined by the activity being conducted and associated hazards. The determination of what type of work area will be established will be made by the HSO in conjunction with the FTL/STR and RadCon personnel (where radiological concerns exist).

Those areas where the primary hazards will exceed action levels or limits shall have traditional HAZWOPER work control zones:

- Exclusion zone (EZ)
- Contamination reduction zone including a contamination reduction corridor (CRC) (the CRC may not be posted but is the primary pathway from the contamination reduction zone [CRZ] to the exclusion zone)
- Support zone.

Both radiological and nonradiological hazards (including industrial safety hazards) will be evaluated when establishing the initial work zone size, configuration, and location. Common barriers may be used to delineate both radiological and nonradiological work-zone postings, depending on the nature and extent of contamination. If common barriers are used, they will be delineated and posted in accordance with both sets of requirements (29 CFR 1910.120 and 10 CFR 835), using appropriate colored rope and postings.

Personnel not directly involved with project activities will be excluded from entering these work areas. Visitors may be admitted into work areas provided they (1) are on official business, (2) received site-specific training or orientation by the STR/HSO/FTL or designee, and (3) have met all the site-specific training requirements for the area they have a demonstrated need to access (including PPE training), as listed in Table 6-1. Visitors will not be allowed access until evidence of training is provided to the project STR/HSO/FTL personnel for verification.

**Note:** Visitors may not be allowed into controlled work areas during moderate to high hazard tasks, such as soil or material removal activities, to minimize risks to workers and visitors. The determination as to any visitor's need for access into the controlled work area will be made by the HSO in consultation with the IH and RCT (as appropriate).

Figure 7-1 illustrates an example of a DWA. The figure represents the general configuration of the work area and is not intended to provide an exact layout, position of equipment, or scale. Changing field activities, equipment, and IH or RadCon monitoring may warrant reconfiguring the layout, size, designation, and orientation of these work areas. Additionally, entrance and egress points may change based on these same factors. Changes, additions, or elimination of areas will be the decision of the FTL/STR, in conjunction with the HSO, RadCon (as appropriate), safety professional, and IH, based on monitoring data and the nature of the activities taking place. The DWA layout will be configured to provide effective hazard mitigation as a priority.

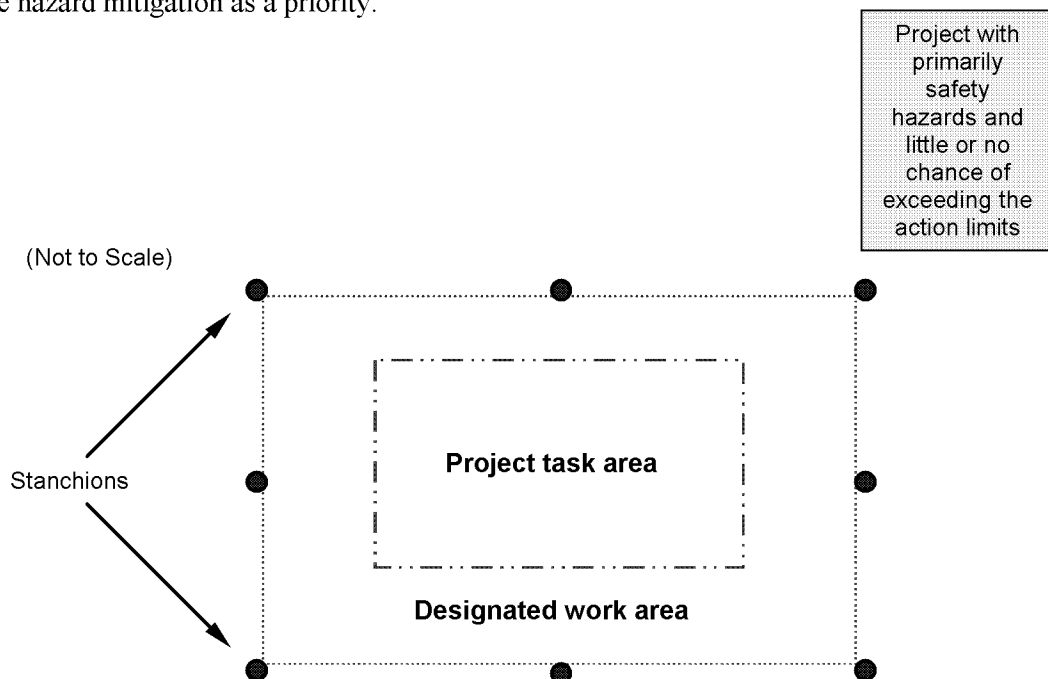


Figure 7-1. Example configuration for an OU 3-13, Group 3, designated work area.



All potential safety, chemical, and radiological hazards will be evaluated when delineating each work area location and size. Barriers (e.g., rope, cones, printed ribbon) will be used for delineation and demarcation. Where warranted, designated traffic routes may also be established. These areas also will be posted to prevent inadvertent entry by unauthorized personnel.

## **7.1 Designated Work Area**

The DWAs established for waste packaging or sampling tasks will consist of the area immediately around the activity. This type of work area will be established where a more restrictive designated work area would not lend itself due to low-hazard sampling tasks of short duration. The boundary of the DWA will typically be marked with cones or stanchions and generally will not be delineated with rope or ribbon or include other demarcation. All personnel who enter the DWA will wear the appropriate level of PPE for the degree and type of hazards present, as listed in Section 5. All DWAs will be delineated and posted with the appropriate signage based on the hazard being controlled, in accordance with PRD-5117 or PRD-2022.

Support facilities and equipment (e.g., project administrative trailer, vehicle parking, additional emergency equipment, extra PPE, and stored monitoring and sampling equipment) will generally be located outside the DWA. Visitors who do not have appropriate training or PPE to access the DWA will be restricted from entering.

## **7.2 Controlled Work Area**

The CWAs will be large enough to encompass the equipment and nature of the tasks being conducted and to prevent personnel not assigned to the project task and visitors from being exposed to potential safety and health hazards associated with the project tasks. This type of work area will be established where a more restrictive area is required based on increased hazards associated with contaminated soil or materials removal tasks. The boundary of the CWA typically will be marked with a combination of stanchions or posts and delineated with rope or ribbon and will include warning signs (e.g., CERCLA area) or other demarcation. Only the minimum number of personnel required to safely perform the project tasks will be allowed into the CWA. The CWA is a controlled area during all project tasks, and an entry and exit point will be established at the periphery of the CWA to regulate the flow of personnel and equipment. All personnel who enter the CWA will wear the appropriate level of PPE for the degree and type of hazards present, as listed in Section 5.

Factors that will be considered when establishing the CWA boundary include (1) air monitoring data, (2) equipment in use, and (3) the physical area necessary to conduct site operations. The boundary may be expanded or contracted as this information becomes available, based on the aforementioned factors. The HSO, in conjunction with the safety professional and industrial hygienist, will establish the CWAs. All CWAs will be delineated and posted with the appropriate signage based on the hazard being controlled in accordance with PRD-5117 or PRD-2022.

**Note:** The safety professional and industrial hygienist will assist the HSO in establishing the access requirements for the truck or heavy equipment traffic routes, designated work areas, and project-based equipment in use.

### **7.3 Truck and Heavy Equipment Traffic Routes**

Truck and heavy equipment traffic routes may be established for trucks entering OU 3-13, Group 3 work sites, based on project activities. If established, these routes will include a turnaround area where feasible and should be delineated with cones or equivalent markers if an existing roadway does not exist. All drivers will be instructed to use these traffic routes when entering and leaving the OU 3-13, Group 3 work areas and worker entry or crossing restrictions should be in effect when truck or equipment traffic is using the routes, except at designated crossing points.

### **7.4 Exclusion Zone**

The exclusion zone will be large enough to encompass the primary task area (e.g., contaminated soil removal or buried compressed gas cylinder removal) and to allow equipment and personnel to move about freely and conduct necessary tasks. The minimum number of personnel required to safely perform project tasks will be allowed into the exclusion zone. If the exclusion zone will be relocated to another site or reconfigured, it will be delineated in a configuration large enough to prevent nonfield team personnel in the support zone from being exposed to potential safety and health hazards. The exclusion zone shape and size will be based on the tasks being conducted, existing structures and facilities, and potential for impact to adjacent areas from project tasks or contaminants.

The exclusion zone is a controlled access zone at all times. An entry and exit point will be established at the periphery of the exclusion zone and CRC to regulate the flow of personnel and equipment. The exclusion zone boundary will be delineated with rope or printed hazard ribbon and posted with signs in accordance with PRD-5117 or PRD-2022.

Factors that will be considered when establishing the exclusion zone boundary include (1) tasks being conducted, (2) air monitoring data, (3) radiological contamination data, (4) radiation fields, (5) equipment in use, (6) the physical area necessary to conduct site operations, and (7) the potential for contaminants to be blown from the area. The boundary may be expanded or contracted as these factors change or additional monitoring information becomes available. All personnel who enter the exclusion zone will wear the appropriate level of PPE for the hazards present and have required training as listed in Sections 5 and 6 of this HASP, respectively.

The HSO, in conjunction with the project IH and/or RCT (for radiological issues) and with the concurrence of the industrial hygienist or RadCon, may upgrade or downgrade OU 3-13, Group 3 sites should monitoring data indicate action levels or limits will or will not be exceeded.

### **7.5 Contamination Reduction Zone and Corridor**

The CRZ and CRC are transition areas surrounding the exclusion zone and are located between the exclusion zone and support zone (Figure 7-2). The CRC may not be formally delineated but will be designated by the travel path from the established CRZ-controlled entry and exit point and the exclusion zone entry and exit point. The CRZ and CRC will serve to buffer the support zone from potentially contaminated exclusion zone areas. The CRZ and CRC may serve as staging areas for equipment and temporary rest areas for personnel.

### **7.6 Support Zone**

The support zone will be considered a “clean” area. The location of the support zone will be in a prevailing upwind direction from the exclusion zone (where possible) and readily accessible from the

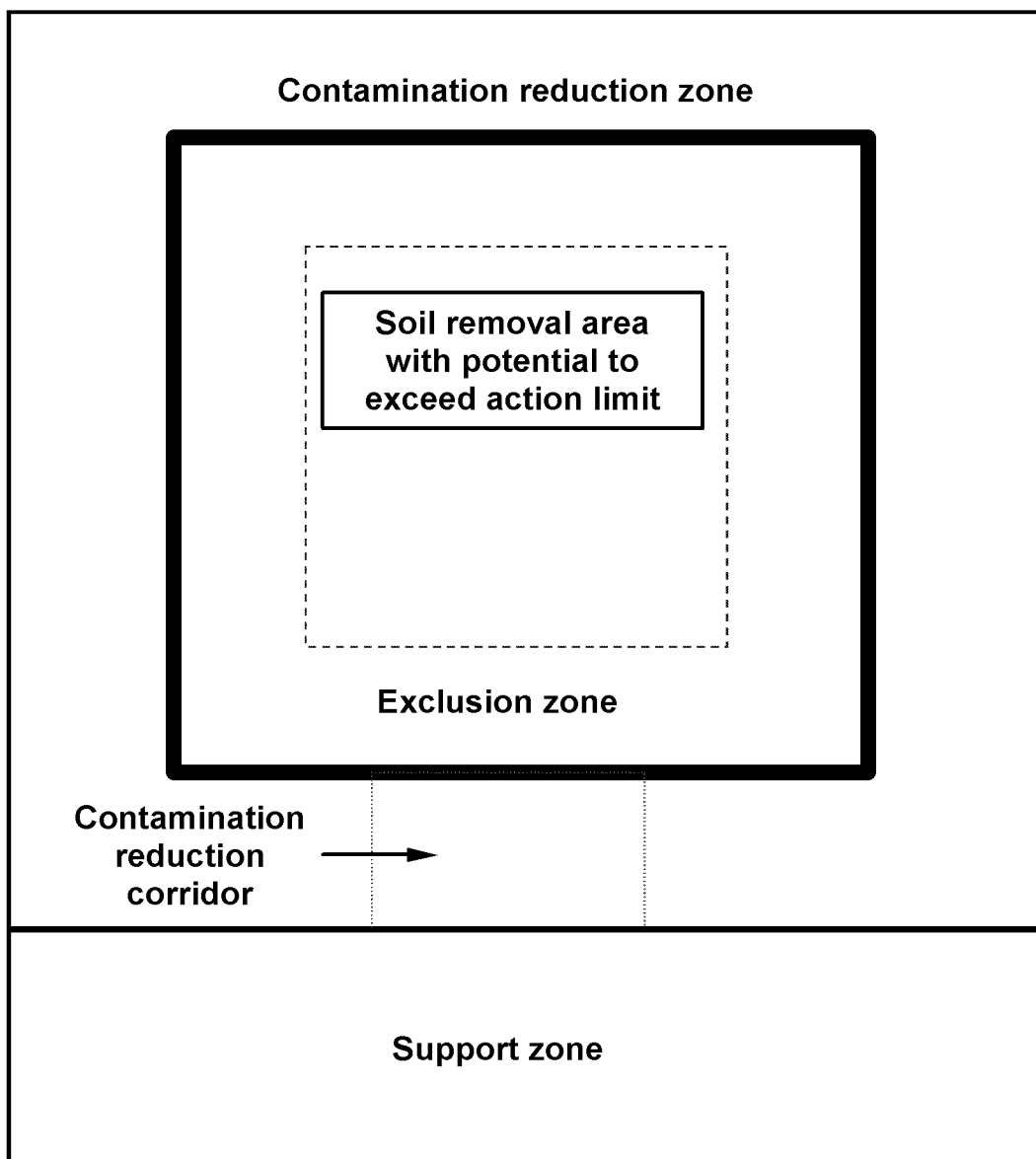


Figure 7-2. General HAZWOPER work zones.

nearest road. The support zone is a designated area or building outside the CRZ and does not have to be delineated. Support trailers, vehicle parking, additional emergency equipment, extra PPE, and stored monitoring and sampling equipment may be located in the support zone. Visitors shall have appropriate training to enter the support zone and any other project areas. Visitors without appropriate training will be restricted from the project support zone.

## 7.7 Radiological Control and Release of Materials

Potentially radiologically contaminated items or equipment will not be released until required radiological surveys have been completed (e.g., hand-held instruments and swipes) in accordance with MCP-139, “Radiological Surveys”; MCP-425, “Radiological Release Surveys, and the Disposition of Contaminated Materials”; as stated in the RWP; and as directed by RadCon personnel.

## **7.8 Site Security**

All OU 3-13, Group 3 project sites will be secured and controlled during normal work hours as described in the previous sections. During nonworking hours, the general project sites located inside ICP facilities are controlled by the facility fence and normal security access requirements. However, additional project site security and control will be required to prevent unauthorized personnel from entering the project area and being exposed to potential safety or health hazards. This will be accomplished by delineating project areas with rope boundaries and posting where hazards are left unmitigated (e.g., open trenches, exposed contaminated soils, or equipment left onsite). Signage will be left in place during off-hours and weekends to prevent personnel from inadvertently entering the area.

The FTL/STR has the primary responsibility for ensuring that the project area is secured. The project HSO and RadCon (where required) will ensure that all health and safety and radiological postings of the area are intact when leaving the site and will be responsible for maintaining them for the duration of the project. Project personnel are trained about site access and control requirements during project-specific HASP training and will not cross roped areas without the proper training and authorization, regardless of whether a sign is in place.

**Note:** Signs are routinely lost because of high winds and will be replaced as soon as possible the next working day following discovery.

## **7.9 Wash Facilities and Designated Eating Areas**

Ingestion of hazardous substances is possible when workers do not practice good personal hygiene habits. It is important to wash hands, face, and other exposed skin thoroughly after completion of work and before smoking, eating, drinking, and chewing gum or tobacco. For project personnel, the designated washing facilities and eating areas will be established before work begins at an OU 3-13, Group 3 site.

## **7.10 Designated Smoking Area**

Smoking will only be permitted in compliance with company policies and procedures. Personnel will comply with all such policies including disposing of smoking materials in the proper receptacle. Smoking is only permitted in nonwork areas. The project HSO, in consultation with the designated fire protection engineer, will be the single point of contact for establishing any smoking area outside facilities, and such areas may not be permitted at certain times of the year because of high or extreme fire danger.

## **8. OCCUPATIONAL MEDICAL SURVEILLANCE**

Work-site personnel will participate in the ICP occupational medical surveillance program (or equivalent subcontractor program), as required by DOE Order 440.1, “Worker Protection Management for DOE Federal and Contractor Employees,” and 29 CFR 1910.120. Medical surveillance examinations will be provided before assignment, annually, and after termination of HAZWOPER duties or employment. This includes the following employees:

- Personnel who are, or may be, exposed to hazardous substances at or above the OSHA permissible exposure limit (PEL), or published exposure limits, without regard to respirator use for 30 or more days per year
- All employees who are injured, become ill, or develop signs or symptoms because of possible overexposure involving hazardous substances or health hazards from an emergency response or hazardous waste operation
- All employees who wear a respirator for 30 days or more a year or as required by “Respiratory Protection” (29 CFR 1910.134).

Personnel who wear a respirator in performance of their job or who are required to take respirator training to perform their duties under this plan must participate in the medical evaluation program for respirator use at least annually, as required by PRD-2109 or MCP-2726, “Respiratory Protection.”

A single copy of the project HASP, job hazard analysis requirements, required PPE, confined space entry requirements (as applicable), and other exposure-related information will be made available, upon request, to the ICP OMP physician (and subcontractor physicians) conducting medical surveillance for employees participating in this project. Exposure monitoring results and hazard information furnished to the OMP physician will be supplemented or updated annually (as stated in Section 12) as long as the employee is required to maintain a hazardous waste and material employee medical clearance. The OMP physician will then evaluate the physical ability of an employee to perform the work assigned.

A documented medical clearance (e.g., a physician’s written opinion) will be provided to the employee and line management stating whether the employee has any detected medical condition that would place him or her at increased risk of health impairment from working in hazardous waste operations, emergency response operations, respirator use areas, and confined space areas, as applicable. The physician may impose restrictions on the employee by limiting the amount and type of work performed.

Personnel are responsible for communicating any work or medical restrictions to their supervisor so modified work assignments can be made if necessary. During the MCP-3003 prejob briefing, the supervisor conducting the briefing should ask workers if they have any work restrictions. However, it is the employee’s responsibility to inform the supervisor of any work or medical restrictions.

### **8.1 Subcontractor Workers**

Subcontractor project personnel will participate in a subcontractor medical surveillance program that satisfies the applicable requirements of 29 CFR 1910.120 or 29 CFR 1926.65. This program must make medical examinations available before assignment, annually, and after termination of hazardous waste duties as stated above. The physician’s written opinion, as defined by 29 CFR 1910.120(f)(7) (or equivalent), will serve as documentation that subcontractor personnel are fit for duty or will list work restrictions.

Medical data from the subcontractor employee's private physician, collected pursuant to hazardous material worker qualification, will be made available to the ICP OMP physicians on request.

## 8.2 Injuries on the Site

It is the policy of the ICP that an ICP OMP physician examine the following personnel:

- An employee injured on the job
- An employee experiencing signs and symptoms consistent with exposure to a hazardous material
- An employee believed to have been exposed to toxic substances or physical or radiological agents in excess of allowable limits during the course of a project at the INEEL.

**Note:** In the event of an illness or injury, the decision to provide first aid and transport to the nearest medical facility or whether to immediately request an ambulance and continue to stabilize and provide first aid should be based on the nature of the injury or illness and likelihood that transporting the individual may cause further injury or harm. Most likely, the person making this decision will only be trained to the medic first/CPR level and should contact the CFA medical facility at 777 or 526-1515 for further guidance if there is any question as to the extent of injury or potential to cause further harm by movement of the injured individual.

In the event of a known or suspected injury or illness caused by exposure to a hazardous substance or physical or radiological agent, the employee will be transported to the nearest INEEL medical facility for evaluation and treatment, as necessary. The HSO and FTL/STR are responsible for obtaining as much of the following information as is available and the HSO shall accompany the individual to the medical facility with the following:

- Name, job title, work (site) location, and supervisor's name and phone number
- Substance, physical or radiological agent exposed to (known or suspected), and material safety data sheet, if available
- Nature of the incident and injury or exposure and associated signs or symptoms of exposure
- First aid or other measures taken
- Locations, dates, and results of any relevant personal or area exposure monitoring or sampling
- List of PPE worn during this work (e.g., type of respirator and cartridge used).

Further medical evaluation will be determined by the treating or examining physician in accordance with the signs and symptoms observed, hazard involved, exposure level, and specific medical surveillance requirements established by the OMP director in compliance with 29 CFR 1910.120.

**Note:** In the event of an illness or injury, subcontractor employees will be taken to the closest INEEL medical facility (CFA), if doing so will not cause further injury or harm, or be transported by INEEL ambulance to have an injury stabilized before transport to the subcontractor's treating physician or off-Site medical facility.

The OU 3-13, Group 3 project manager and health and safety officer will be contacted immediately if any injury or illness occurs at a project site. The STR/FTL/HSO shall secure the accident scene in a safe manner to prevent evidence disturbance. As soon as possible after an injured employee has been transported to the INEEL medical facility, the STR/FTL or designee will make notifications as indicated in Section 10. The HSO will accompany the injured personnel to the INEEL Medical Facility. The accident investigation will be conducted by project personnel, as directed by the project manager and project HSO, in addition to the employee work organization management who is ultimately responsible for ensuring an internal investigation is performed.

### **8.3 Substance-Specific Medical Surveillance**

No substance-specific medical surveillance protocols are required at this time. If new contaminants of concern are identified, and as potential exposure to known contaminants is quantified as required in Section 3, the project IH will determine applicable substance-specific medical surveillance protocols. If regulatory-mandated substance-specific standard action levels are triggered, then affected personnel will be enrolled in applicable substance-specific medical surveillance programs.





## **9. KEY SITE PERSONNEL RESPONSIBILITIES**

The organizational structure for this project reflects the resources and expertise required to perform the work while minimizing risks to worker health and safety, the environment, and the public. Key project positions, lines of responsibility, and communication are shown on the organization chart for the site (see Figure 9-1). This organization chart is not all-inclusive but shows the structure for key resources assigned to complete project tasks. The Clean/Close program management plan (PMP) and Clean/Close project-specific project execution plan (PEP) details roles and responsibilities for program personnel above the project manager level. Section 9.1 outlines the responsibilities of key site personnel.

### **9.1 Work Site Responsibilities**

#### **9.1.1 Field Team Leader**

The FTL represents the ICP organization at project site(s) with delegated responsibility for the safe and successful completion of the project tasks. The FTL will manage tasks and execute the applicable field sampling plans, TPRs, and other project-specific documents. The FTL may serve as the sampling FTL for all routine monitoring tasks and may temporarily serve as the HSO based on the qualifications and complexity of the activities. The FTL enforces site control, documents activities, and conducts (or may delegate to an appropriately trained alternate) the POD meeting or prejob briefing at the start of the shift. Health and safety issues must be brought to the attention of the FTL. The FTL will report project status on a regular basis to the project manager. Additional responsibilities include, but are not limited to, the following:

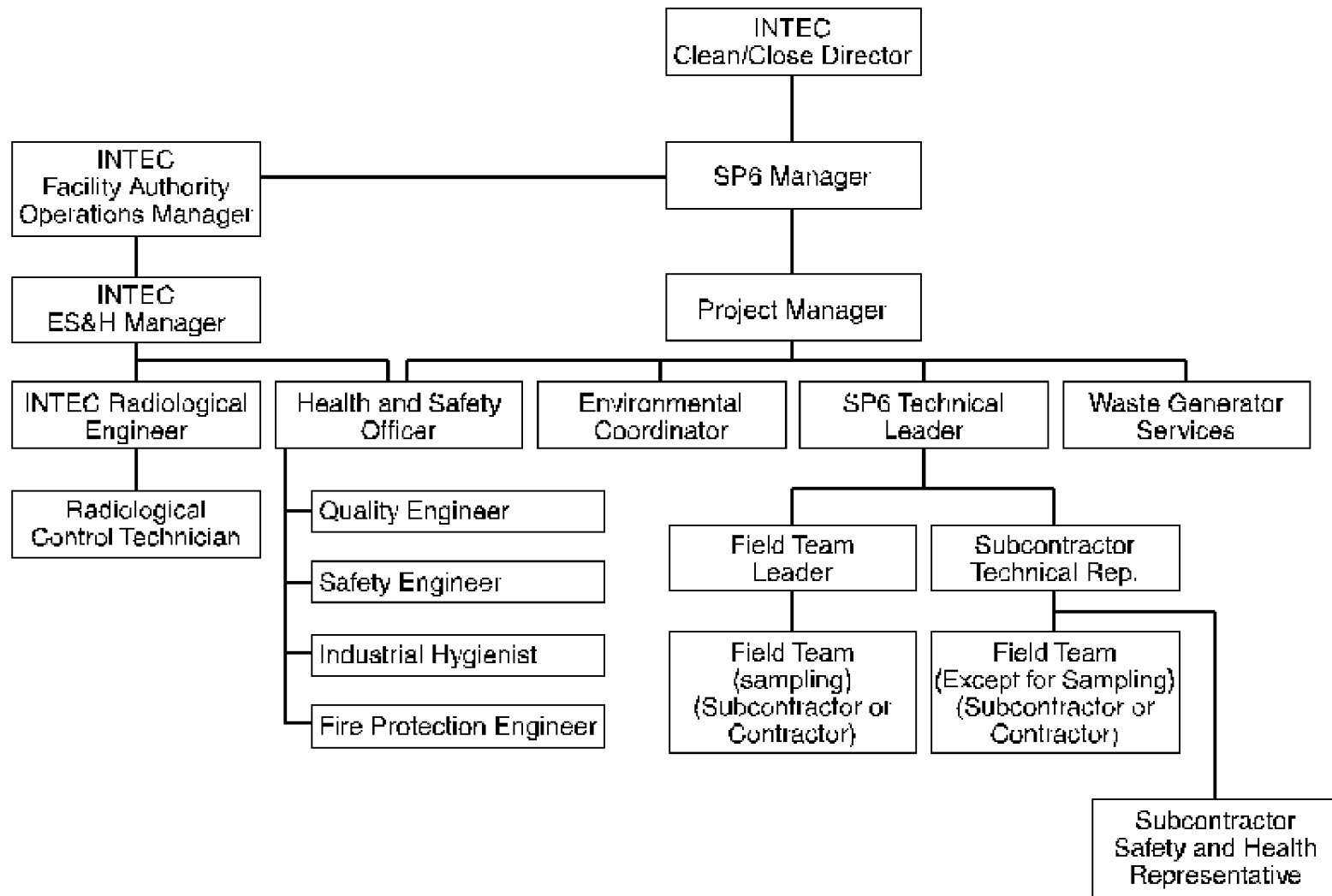
- Ensuring that all field activities are conducted in compliance with TPRs, work orders, and associated ISMS requirements
- Ensuring field team personnel comply with INTEC facility and operations requirements (as applicable)
- Obtaining and coordinating all resources needed to implement the field work including equipment, labor, and administrative and technical permits and approvals
- Coordinating with the facility interface to schedule routine monitoring tasks through the facility POD
- Directing subcontract personnel supporting tasks at the project site.

If the FTL leaves the site, an alternate individual will be appointed and that information is communicated to all field personnel. Persons acting as FTL must meet all the FTL training requirements outlined in Section 6.

#### **9.1.2 Health and Safety Officer**

The HSO is the person assigned to the work site who serves as the primary contact for all health and safety issues. The HSO advises the FTL/STR on all aspects of health and safety and is authorized to stop work at the work site if any operation threatens worker or public health or safety. The HSO is authorized to verify compliance to the HASP, conduct inspections and self-assessments, require and

INTEC Clean/Close Organization Chart



03-GA50961-01

Figure 9-1. OU 3-13, Group 3, Other Surface Soils, remediation project organization chart.

monitor corrective actions, and monitor decontamination procedures as appropriate. The SH&QA professionals at the task site (e.g., safety professional, industrial hygienist, environmental coordinator, and facility representative) support the HSO.

Persons assigned as the HSO or alternate HSO must be qualified (in accordance with the definition in 29 CFR 1910.120) to recognize and evaluate hazards and will be given the authority to take or direct actions to ensure that workers are protected. While the HSO may also be the industrial hygienist, safety professional, or in some cases the FTL (depending on the hazards and complexity of the activity involved), other work-site responsibilities of the HSO must not interfere with the primary role of the HSO at the work site.

If it is necessary for the HSO to leave the site, an alternate individual will be appointed by the HSO to fulfill this role and that person's identity will be communicated to project personnel.

### **9.1.3 Subcontractor Technical Representative**

The STR is the individual representing remedial design/remedial action management at the site, with ultimate responsibility for the safe and successful completion of assigned project tasks. The STR manages field operations and executes the work plan, enforces site controls and documents work-site activities, and may conduct the daily POD briefing at the start of the shift. All health and safety issues at the work site must be brought to the STR's attention. The STR also will serve as the primary area warden during the project.

If the STR leaves the project site, an alternate individual will be appointed to act as the STR. Persons acting as STR on the project site must meet all STR training requirements outlined in Section 6 of the project HASP. The identity of the acting STR will be conveyed to work-site personnel, recorded in the daily force reports, and communicated to the facility representative when appropriate.

If the nature of the field work requires involvement of field team staffing by equipment operators, laborers, or other crafts, a representative from the organization supplying these additional resources interfaces with the STR to provide work supervision. This person may be designated the job site supervisor (JSS).

### **9.1.4 Industrial Hygienist**

The assigned industrial hygienist is the primary source for information about exposure assessments for the project chemical, physical, and biological hazards at the work site. The industrial hygienist assesses the potential for worker exposures to hazardous agents in accordance with companywide safety and health manuals, MCPs, and industry-accepted industrial hygiene practices and protocol. By participating in project planning, the industrial hygienist assesses and recommends appropriate hazard controls for the protection of site personnel, operates and maintains airborne sampling and monitoring equipment, reviews engineering controls for effectiveness, and recommends and assesses the use of PPE as required in this HASP (recommending changes as appropriate).

Personnel showing health effects (i.e., signs and symptoms) resulting from possible exposure to hazardous agents will be referred to an OMP physician by the industrial hygienist, supervisor, or HSO. The industrial hygienist may have other duties at the site as specified in other sections of this HASP or in PRDs or MCPs.

### **9.1.5 Safety Professional**

The assigned safety professional reviews work packages, observes site activity, assesses compliance with the companywide safety and health manuals, advises the HSO on required safety equipment, and recommends solutions to safety issues and concerns that arise at the work site. The safety professional may conduct periodic inspections in accordance with MCP-3449 and may have other duties at the work site as specified in other sections of this HASP or in PRDs and MCPs. Copies of any safety and health inspections will be kept in the project field file.

### **9.1.6 Radiological Engineer**

The radiological engineer is the primary source for information and guidance relative to the evaluation and control of radioactive hazards at OU 3-13, Group 3 sites. If a radiological hazard exists or occurs at a Group 3 site, the radiological engineer makes recommendations to minimize health and safety risks to site personnel. Responsibilities of the radiological engineer include

- Performing radiation exposure estimates and ALARA evaluations
- Identifying the type(s) of radiological monitoring equipment necessary for the work
- Advising the HSO and RCT of changes in monitoring or PPE
- Advising personnel on site evacuation and reentry.

The radiological engineer may also have other duties to perform as specified in other sections of this HASP or in accordance with companywide Manual 15B, "Radiation Protection Procedures."

### **9.1.7 Radiological Control Technician (as applicable)**

The assigned RCT is the primary source for information and guidance on radiological hazards that may be encountered during project tasks and controls necessary to mitigate them. Responsibilities of the RCT include the following:

- Performing radiological surveying of the site, equipment, and samples
- Providing guidance for radioactive decontamination of equipment and personnel
- Accompanying the affected personnel to the nearest INEEL medical facility for evaluation if significant radionuclide contamination occurs.

The RCT must notify the FTL/STR and HSO of any radiological occurrence that must be reported, as directed by the INEEL Radiological Control Manual (PRD-183).

### **9.1.8 Fire Protection Engineer**

The INTEC fire protection engineer is available to provide technical guidance to the HSO and FTL about all fire protection issues and may be assigned to review the work packages and conduct preoperational and operational fire hazard assessments. The INEEL fire department also may need to be advised of fuel storage areas (if required) and will provide authorization for all hot work operations performed at the project site during times of high-to-extreme fire danger. The fire protection engineer is

required to sign all safe work permits used as hot (radiological) work permits within the jurisdiction of the facility site area director (SAD).

#### **9.1.9 Sampling Team (as applicable)**

The sampling team, if appointed, will consist of the FTL and support personnel and is responsible for the collection, preservation, and shipping of all routine monitoring samples in accordance with the applicable field sampling plan and TPRs. The industrial hygienist and safety professional will support the sampling team, as required, based on site-specific hazards and task evolutions. The sampling team will be led by a sampling FTL who also may perform other roles during the project. Bulk waste sampling is not anticipated on OU 3-13, Group 3 Other Surface Soils, remediation sites.

#### **9.1.10 Specialty Subcontractors**

Specialty subcontractors may be used to support equipment maintenance or waste stream characterization, handling, and shipping. A subcontractor lead will serve as the single point of contact for all subcontractor communication at the site and will report to the FTL/STR for all technical direction and interface issues at the project site. Subcontractor personnel will report any health and safety issues that arise to the FTL/STR or HSO and may stop work if an unsafe condition exists. The subcontractor lead also will be asked to provide hazard and mitigation information about the nature of their equipment or operations during the POD meeting and may participate in job-site hazard walkdowns where appropriate.

#### **9.1.11 Field Team Personnel**

All field team personnel, including facility and subcontractor support personnel assigned to the project, will understand and comply with the requirements of this HASP. The FTL/STR (or designee) will conduct a formal prejob briefing or POD at the start of each shift. During the POD briefing, all daily tasks, associated hazards, hazard mitigation (e.g., engineering and administrative controls, required PPE, and work control documents), and emergency conditions and actions will be discussed. Input from the project HSO, industrial hygienist, and safety personnel (where assigned) will be provided to clarify task health and safety requirements as deemed appropriate. All project personnel are encouraged to ask questions about site tasks and provide suggestions on ways to perform required tasks in a more safe and effective manner based on the lessons learned from previous routine monitoring activities.

Once at the project site, field team personnel are responsible for identifying any potentially unsafe situations or conditions to the FTL/STR or HSO for corrective action.

<p><b>Note:</b> If it is perceived that an unsafe condition poses an imminent danger, site personnel are authorized to stop work immediately and notify the FTL/STR or HSO of the unsafe condition.</p>
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#### **9.1.12 Nonfield Team Personnel**

All persons who may be at a project site and are not part of the field team (e.g., surveyors or others not assigned a field team support role) are considered nonfield team personnel as defined by this HASP. A person will be considered onsite when they are present in the support zone, designated work areas, or controlled work areas.

Nonfield team personnel are considered occasional site workers in accordance with the HAZWOPER and must receive site-specific HASP training in addition to 24-hour HAZWOPER training,

and required training outlined in Table 6-1 at a minimum, before entering work areas at the project site. A site supervisor (e.g., HSO or FTL/STR) will supervise nonfield team personnel who have not completed their 3 days of supervised field experience in accordance with the HAZWOPER requirements.

### 9.1.13 Visitors

All visitors with official business at the project site (including ICP personnel, representatives of DOE, and state or federal regulatory agencies) may only proceed beyond the support zone after meeting the following requirements:

- Receive site-specific HASP training or hazard briefing based on specific tasks taking place
- Sign a HASP training roster and providing proof of having met all training requirements specified in Section 6 (or required access training for the area to be visited when project tasks are not being conducted)
- Participate in a prejob briefing in accordance with MCP-3003
- Provide objective evidence of PPE, training, and wearing the appropriate PPE for the area of the site to be accessed (29 CFR 1910.132).

If there is no potential for exposure to chemical, radiological, or safety hazards (e.g., down time) a visitor may be escorted at the project site after receiving a site orientation consisting of

- An overview of the controlled areas at the site and access restrictions
- Potential general site hazards and mitigation
- Required PPE for entry to the site (must be trained to wear required PPE)
- Emergency action to take in case of a take-cover or evacuation alarm.

**Note:** Visitors will not be allowed into controlled work areas (even with proper training) during active soil removal activities and hoisting operations to minimize the risk of injury or exposure. The determination as to any visitor's need for access into the controlled work areas during such tasks will be made by the FTL/HSO in consultation with the project RCT as appropriate.

A fully trained work-site representative (e.g., FTL/STR or HSO, or a designated alternate) will escort visitors when entering controlled areas of the project site, as site conditions warrant, and as deemed appropriate by the FTL/STR/HSO.

A casual visitor to the work site is a person who does not have a specific task to perform or other official business to conduct at the project site. Casual visitors are not permitted in work zones or designated work areas at any project site.

## **9.2 Facility (INTEC) Responsibilities**

### **9.2.1 Waste Area Group 3, INTEC Interface**

The WAG 3, INTEC construction coordinator serves as the point of contact for work coordination. The WAG 3 construction coordinator provides advance notice to the PMT of scheduled activities (including documents requiring facility review or approvals) that impact site area operations and provides advance notice of site area operations that impact ICP project activities.

### **9.2.2 INTEC Work Authorization**

The INTEC clean/close director is responsible for all operational activities at the INTEC and must be cognizant of work being conducted in the facility. The Group 3 project manager is responsible for evaluating all activities with respect to the OU 3-13, Group 3, safety authorization and for approving all work packages and JSAs. The Group 3 project manager will be kept informed of the project status through the construction coordinator and task leader, and the facility POD for activities performed at the INTEC.

All activities will be scheduled through the facility as well as through work packages and procedures and will be opened daily as required. The FTL/STR (or designee) will provide authorization (i.e., signature on work order or TPR) to initiate daily activities.

## **9.3 Project Management Team**

The Project Management Team (PMT) headed by the INTEC clean/close director is responsible for the development and management of the project and the coordination of project operations. The PMT ensures that (a) operations, Federal Facility Agreement and Consent Order (DOE-ID 1991) compliance support, surveillance, and monitoring activities are conducted in accordance with INEEL applicable MCPs and PRDs, all applicable requirements (OSHA, U.S. Environmental Protection Agency, DOE, U.S. Department of Transportation, and State of Idaho) and (b) tasks comply with PLN-694, “Project Execution Plan for the Balance of INEEL Cleanup Project,” and this HASP. The PMT is responsible for the overall work scope, schedule, and budget for this project.





## 10. EMERGENCY RESPONSE PLAN

This emergency response plan defines the roles and responsibilities of project personnel during an emergency. Such an emergency could be at the project site, on a tenant facility or collocated facility, or a Site-wide emergency. This section provides details of the ICP Emergency Response Organization (ERO) and PLN-114, "INEEL Emergency Plan RCRA Contingency Plan," information. PLN-114 describes the overall process developed to respond to and mitigate consequences of emergencies that might arise at the INEEL.

PLN-114 may be activated in response to events occurring at the project site, at the INEEL, or at the discretion of the emergency coordinator or emergency action manager. Once the INEEL plan is activated, project personnel will follow the direction and guidance communicated by the emergency coordinator.

**Note:** The OSHA HAZWOPER definition of an emergency is not the same as the one in DOE Orders 151.1A, "Comprehensive Emergency Management System," and 231.1A, "Environment, Safety, and Health Reporting." For this reason, the term "event" will be used in this section when referring to project HAZWOPER emergencies.

### 10.1 Preemergency Planning

PLN-114 provides the basis for preplanning all INEEL emergency events. This base plan is supplemented with INEEL facility-specific addenda. This preplanning makes it possible for the project to anticipate and appropriately respond to abnormal events that can affect project activity. Preplanning also ensures that the project emergency response program is integrated with that of the INEEL. Specific procedures for addressing emergency events and actions to be taken are further described in the facility-specific emergency implementing procedures. Finally, the HASP addresses project-specific hazards, potential emergency events, and the actions to take following such events.

### 10.2 Emergency Preparation and Recognition

The sections for hazard identification and mitigation and for accident prevention provided the strategy that will be followed at the project site to prevent accidents. Similarly, emergency preparation and recognition also will require project personnel to be constantly alert for potentially hazardous situations and signs and symptoms of chemical exposure or releases. All field personnel should be familiar with the techniques for hazard recognition, the assigned action levels, and associated actions to be taken as identified in Section 3.

MCP-2725, "Field Work at the INEEL," requirements for training, emergency actions, and notifications will be followed for all projects conducted outside facility boundaries.

Preparation and training for emergencies will include proper site access and egress procedures in response to project events and INEEL emergencies as part of the project-specific HASP training and facility access training where applicable. Visitors also will receive this training on a graded approach based on their site access requirements. Visitor training will include alarm identification, location and use of communication equipment, location of site emergency equipment, and evacuation. Emergency phone numbers and evacuation route maps will be located in the project trailer.

On-scene response to and mitigation of site emergencies could require response from both project personnel and INEEL fire department personnel. Emergencies could include the following scenarios:

- Accidents resulting in injury
- Fires
- Spills of hazardous or radiological materials
- Tornadoes, earthquakes, or other adverse natural phenomena
- Vehicle or transportation emergencies
- Safeguard and security emergencies
- Emergencies at nearby facilities that could prompt evacuation or take-cover actions at the work site.

## 10.3 Emergency Alerting, Responses, and Sheltering

### 10.3.1 Alarms

Alarms and signals are used at the project site and the INEEL to notify personnel of abnormal conditions that require a specific response. Responses to these alarms are addressed in general employee training. Emergency sirens located throughout the INEEL serve as the primary means for signaling emergency TAKE COVER or EVACUATION protective actions. To signal site personnel of a project-initiated emergency event, a separate set of emergency signals has been established based on horn blasts (e.g., vehicle or air horn).

Depending on the field location (within or outside a facility), facility alarms may not be able to be heard at the project site. If the project site is outside the audible range of the facility alarms, then the notification to take cover or evacuate should be received on the field radio. The project signals will then be used to alert personnel of the emergency actions.

**10.3.1.1 Take Cover—Continuous Siren.** Radiation or hazardous material releases, adverse weather conditions, or other event or emergency conditions may require that all personnel take cover indoors in the nearest building. A TAKE COVER protective action may be initiated as part of a broader response to an emergency situation and may precede an evacuation order. The order to TAKE COVER is usually announced by activating the emergency siren. The signal to take cover is a CONTINUOUS SIREN.



However, the order to take cover also can be given by word of mouth, radio, or voice paging system. When ordered to TAKE COVER, project personnel will place the site and equipment in a safe configuration (as appropriate) and then seek shelter in the project trailer or vehicle (if outside the facility). Eating, drinking, and smoking are not permitted during take-cover conditions.

**10.3.1.2 Total Area Evacuation—Alternating Siren.** A total area evacuation is the complete withdrawal of personnel from the project site and the entire facility area. The evacuation signal is an ALTERNATING SIREN. When ordered to EVACUATE, project personnel will place equipment and the site in a safe configuration (as appropriate) and then proceed along the specified evacuation route to the designated assembly area or as directed by the emergency coordinator.



**ALTERNATE = EVACUATE**



For total area evacuations, the facility command post is activated and all personnel will gather at the primary facility evacuation assembly area or the location designated by the EC or FTL/STR if outside a facility. The FTL/STR or trained alternate will then complete the personnel accountability using the attendance log. In this situation, the project area warden will report the result of the accountability process to the facility emergency coordinator.

**10.3.1.3 Local Area Evacuation—Vehicle Horn Blast.** A local area evacuation is the complete withdrawal of personnel from the project site, but it does not require the complete evacuation of the entire facility or INEEL area. A single long horn blast (e.g., vehicle) will serve as the project's primary emergency evacuation signal (as listed on Table 10-1). However, the order to evacuate also can be given by word of mouth, radio, or voice paging system. When ordered to evacuate the project site, personnel will place the site in a safe condition (as appropriate) and then proceed along the specified evacuation route to the assembly area designated for local area evacuations or as directed by the FTL/STR. Eating, drinking, and smoking are not permitted during emergency evacuations.

## **10.4 Personnel Roles, Lines of Authority, and Training**

### **10.4.1 The Idaho National Engineering and Environmental Laboratory Emergency Response Organization**

The INEEL Emergency Response Organization (ERO) structures are based on the incident command system and are described in PLN-114 and facility-specific addendums to that plan.

### **10.4.2 Role of Project Personnel in Emergencies**

Depending on the event, a graded response and subsequent notifications will take place. FTL/STR and project personnel responsibilities are described below. Personnel will respond to emergencies only within the limits of their training and designated by their position. All personnel must be trained to the

Table 10-1. Project internal emergency signals.

Device or Communication Method	Signal and Associated Response
Vehicle horn blasts	<p><b><u>One long blast</u></b>—Emergency evacuation, evacuate project site immediately. Proceed in an upwind direction to designated assembly area as specified by the FTL/STR.</p> <p><b><u>Two short blasts</u></b>—Nonemergency evacuation of immediate work area. Proceed to designated assembly area as specified by the FTL/STR.</p> <p><b><u>Three long blasts</u></b> or verbally communicated—All clear, return to project site.</p>

facility-specific emergency actions as part of the access training or will be escorted by someone who has been trained. Emergency response actions also will be covered as part of the HASP briefing as stated in Table 6-1.

**10.4.2.1 Field Team Leader.** The FTL (or designated alternate) is responsible for initiating all requests for emergency services (e.g., fire and medical) and for notifying the construction coordinator of abnormal or potential emergency events that may occur during the project. The FTL will also serve as the area warden, or designate that responsibility to another person who has been trained as area warden, and will conduct personnel accountability. Personnel accountability will be reported to the shift supervisor. Additionally, the FTL will control the scene until a higher-tiered incident command system authority arrives at the scene to take control. When relinquishing this role, the FTL (or designated alternate) will provide all information about the nature of the event, potential hazards, and other information requested.

**10.4.2.2 Project Personnel.** Every person at the project site has a role to play during a project event or INEEL emergency. Each employee must be constantly aware of potential problems or unexpectedly hazardous situations and immediately report these situations to the FTL/STR. All personnel are expected to watch out for their fellow workers, to report their concerns to the FTL/STR, and to take emergency actions as described in this section. Roles and responsibilities are further detailed in Table 10-2.

**10.4.2.3 Personnel Accountability and Area Warden.** Project personnel are required to evacuate the site in response to TAKE COVER, EVACUATION, and local evacuation alarms. In all cases, the FTL/STR or trained designee will account for the people present on the project site. The FTL/STR or trained alternate will serve as the area warden for the project and will complete the personnel accountability following positive sweeps of the project site based on the attendance log. The results of this accountability will then be communicated to the FTL/STR for reporting to the shift supervisor or emergency coordinator if the command post has been formed.

**10.4.2.4 Spills.** If the material spilled is known and is small enough to be safely contained at the work site, work-site personnel will handle spill control using spill supplies at the site and immediately report the incident to the shift supervisor or WCC if the shift supervisor cannot be contacted. Reporting requirements will be determined by the facility emergency coordinator in accordance with MCP-190, “Event Investigation and Occurrence Reporting.” If any release of a hazardous material occurs, work-site personnel will comply with the following immediate spill response actions.

Table 10-2. Responsibilities during an emergency.

Responsible Person	Action Assigned
Field team leader (or designee)	Signal evacuation Report spill to shift supervisor and take mitigative actions <sup>a</sup> Contact shift supervisor or Warning Communications Center (if the shift supervisor cannot be contacted)
Field team leader (or trained designee)	Serve as area warden and conduct accountability and report to shift supervisor
Health and safety officer and medic and first-aid-trained personnel	Administer first-aid to victims (voluntary basis only)

a. The environmental affairs spill response categorization and notification team will be contacted by the shift supervisor or emergency coordinator.

**10.4.2.4.1 Untrained Initial Responder**—The requirements for the untrained initial responder, or if the material characteristics are unknown, are listed below:

- Place equipment in a safe configuration
- Evacuate and isolate the immediate area
- Notify and then seek help from and warn others in the area
- Notify the FTL/STR.

**10.4.2.4.2 Trained Responder.** The requirements for the trained responder where material characteristics are known and no additional PPE is required are listed below:

- Place all equipment in a secure configuration
- Seek help from and warn others in the area
- Stop the spill if it can be done without risk (e.g., returning the container to the upright position, closing valve, and shutting off power)
- Provide pertinent information to the FTL/STR
- Secure any release paths if it is safe to do so.

## **10.5 Medical Emergencies and Decontamination**

Medical emergencies and responses to injuries or suspected exposures will be handled as stated in Section 8.2. Decontamination of personnel and equipment is described in Section 11.2.

## **10.6 Emergency Communications**

In the event of an emergency, the capability to summon INEEL emergency response resources, to immediately notify site personnel, and to inform others of site emergencies is required. Communications equipment at the work site will be a combination of radios, telephones (e.g., mobile, cellular, or facility), and pagers. Communication methods described below will be used during emergency situations.

### **10.6.1 Notifications**

During emergency situations, the facility shift supervisor will be notified of any project emergency event. The shift supervisor will then make the required ERO notification. The following information should be communicated, as available, to the shift supervisor:

- The caller's name, title (e.g., FTL/STR or HSO), telephone number, and pager number
- Exact location of the emergency
- Nature of the emergency, including time of occurrence, current site conditions, and special hazards in the area

- Injuries, if any, including numbers of injured, types of injuries, and conditions of injured
- Emergency response resources required (e.g., fire, hazardous material, and ambulance)
- Additional information as requested.

**Note:** If the shift supervisor cannot be contacted then the WCC will be notified of the event and the above information will be communicated. The WCC also must be told that notification to the facility shift supervisor and emergency coordinator has not been made.

## 10.7 Emergency Facilities and Equipment

Emergency response equipment maintained at the project site includes the items listed in Table 10-3. The INTEC facility-specific addendum to PLN-114 lists emergency equipment available at the facility. This includes the command post, self-contained breathing apparatus, dosimeters, air samplers, decontamination and first-aid equipment, and an emergency response trailer. The INEEL fire department maintains an emergency hazardous material response van that can be used to respond to an event or emergency at the project. Fire department personnel are also trained to provide immediate hazardous material spills and medical services. Additionally, the CFA-1612 medical facility is manned by medical personnel to evaluate and stabilize injured personnel or those experiencing signs and symptoms of exposure.

**Note:** Workers at CPP-37A and CPP-67 will assemble at the southeast staging area.

Table 10-3. Emergency response equipment to be maintained at the project site during operations.

Equipment Name and Quantity Required	Location at Work Site	Responsible Person	Frequency of Inspection or Verification <sup>a</sup>
First-aid kit	Project vehicle or near DWA or CWA	Health and safety officer (HSO)	Monthly: verify at least 50% of original contents are available for use
Eyewash bottles <sup>b</sup> Eyewash station <sup>b</sup>	In or near DWA or CWA	HSO	Monthly
Extra personal protective equipment <sup>a</sup>	Project vehicle or support trailer	HSO	Daily verification
Communication equipment (operational) <sup>a</sup>	Onsite	Field team leader	Daily radio check
Fire extinguishers <sup>c</sup>	In or near DWA or CWA	HSO	Monthly

a. This is verification that equipment is present at the project location before starting tasks and no inspection tag is required.

b. An eyewash bottle will be used to provide an immediate eye flush if required. The location of the eyewash station will be identified by the HSO during the prejob briefing.

c. A minimum of one 10A/60BC extinguisher is required. If it is discharged, it will be returned for servicing and recharging.

## **10.8 Evacuation Assembly Areas and Central Facilities Area Medical Facility**

The INTEC maintains primary and secondary evacuation routes and assembly areas (see Figure 10-1). These routes may be used in response to a total facility area evacuation as directed by the emergency coordinator. Copies of the evacuation assembly areas and the CFA-1612 medical facility route (see Figure 10-2) will be available at the project site.

## **10.9 Reentry, Recovery, and Site Control**

All reentry and recovery activities will follow general site security and control requirements identified in Section 7 unless conducted as part of an emergency response action. All entries to the project site performed in support of emergency actions will be controlled by the on-scene commander.

### **10.9.1 Reentry**

During an emergency response it is sometimes necessary to reenter the scene of the event. Reasons for performing a reentry may include

- Performing personnel search and rescue
- Responding to medical first-aid needs
- Performing safe shutdown actions
- Performing mitigating actions
- Evaluating and preparing damage reports
- Performing radiation or hazardous material surveys.

Reentries will be carefully planned to ensure that personnel are protected from harm and to prevent initiating another emergency event. Reentry planning is undertaken as a graded approach depending on the nature of the initiating event.

### **10.9.2 Recovery**

After the initial corrective actions have been taken and effective control established, response efforts will shift toward recovery. Recovery is the process of assessing postevent and postemergency conditions and developing a plan for returning to preevent and preemergency conditions, when possible, and following the plan to completion. The emergency coordinator and emergency action manager are responsible for determining when an emergency situation is sufficiently stable to terminate the emergency and enter the recovery phase. The project manager, with concurrence from the area SAD, will appoint the recovery manager.

## **10.10 Critique of Response and Follow-up**

A review and critique will be conducted following all emergency events, drills, and exercises at the ICP. In some cases, an investigation may be required before commencing recovery actions. For this reason, care should be exercised to preserve evidence when appropriate.

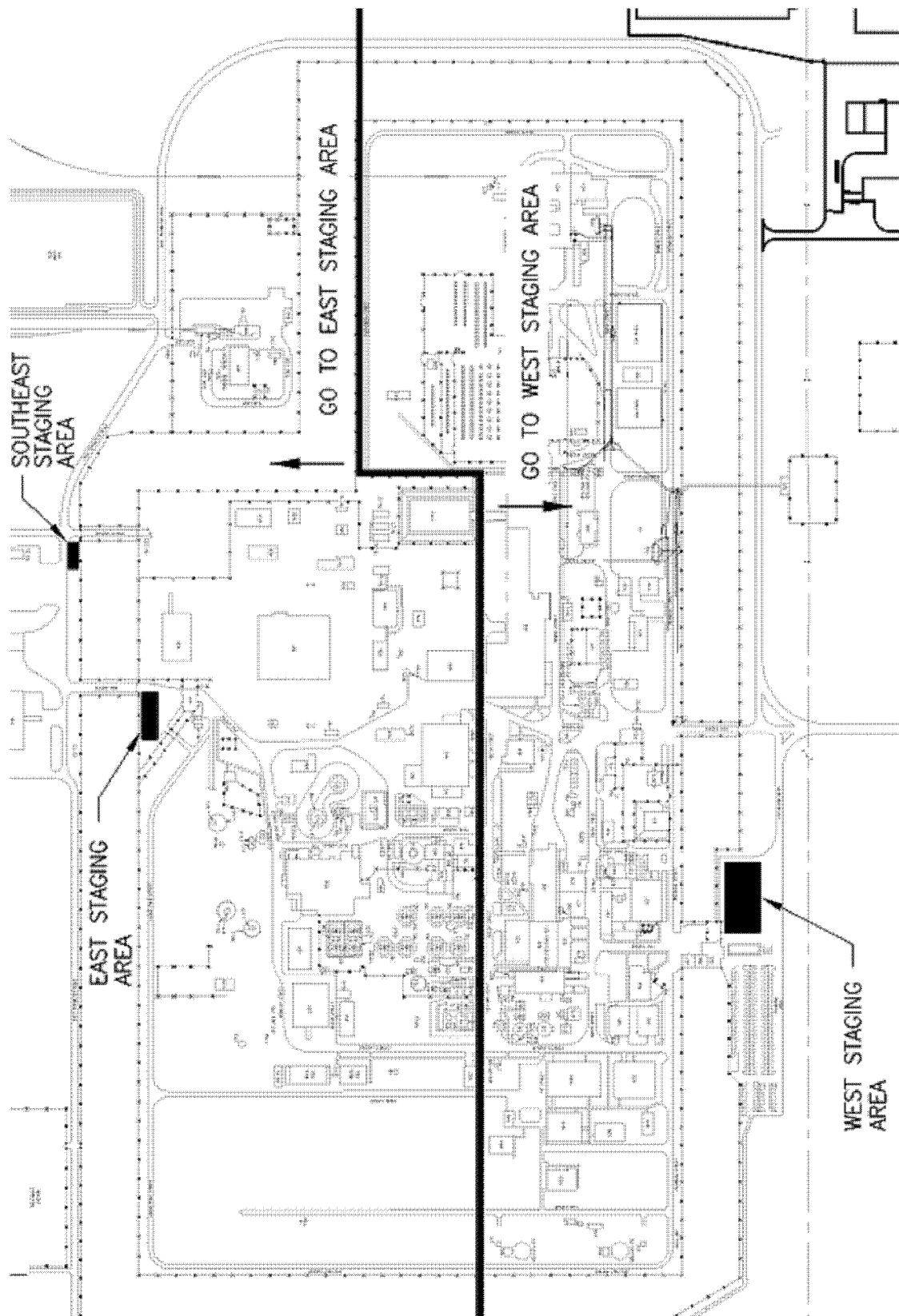


Figure 10-1. INTEC primary and secondary evacuation assembly areas.



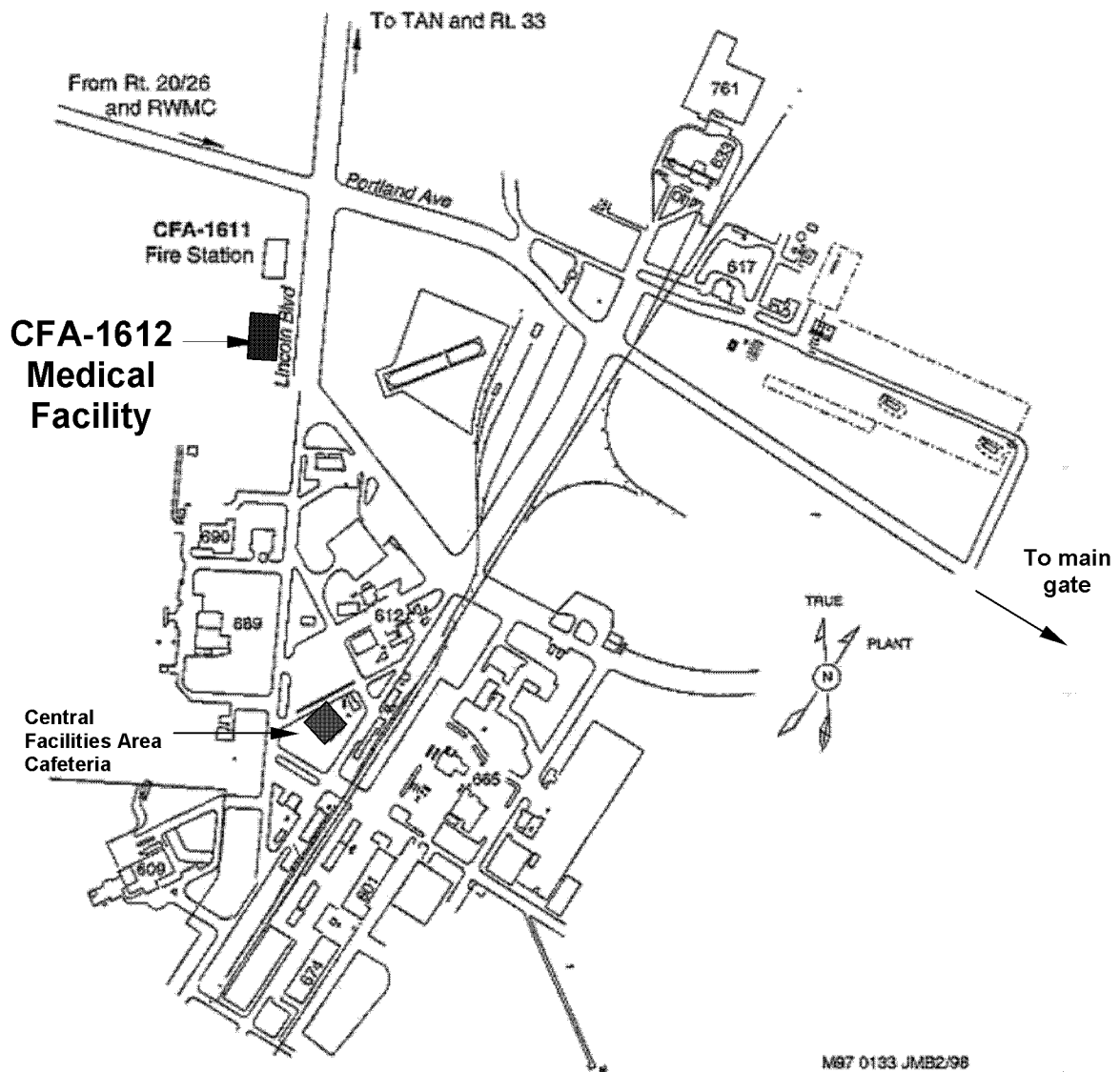


Figure 10-2. Map showing the route to the nearest medical facility (CFA-1612).

## 10.11 Telephone and Radio Contact Reference List

Table 10-4 lists the points of contact for the project. A copy of this list will be kept in the FTL/STR logbook. Because personnel listed may change frequently, working copies of this list will be generated as required to note new positions and changes of personnel assigned. A Field Document Action Request (DAR) will be generated and the revised list posted to the FTL/STR logbook and distributed as warranted.

Table 10-4. Project emergency contact list.

Contact Title	Contact Name	Phone Number or Radio Net	Cellular Phone Number	Pager Number
Fire, medical emergency, and security Warning Communications Center	NA <sup>a</sup>	777 6-1515	NA	NA
Subcontract Technical Representative	Joseph Landis	6-6311	521-2323	6792
INTEC plant shift supervisor	Duty officer	6-3100	NA	2096
Facility authority	Paul Yela	6-8899	521-0876	6264
Environment, safety, and health manager	Corrinne Jones	6-8079	520-4191	5728
Radiological control supervisor	Dave Wirkus	6-3742	521-1648	3378
Radiological engineer	Larry Auman	6-2182	521-7570	7348
Department of Energy Idaho Operations Office facility representative	Rachel Collins Hall	6-1661	NA	3422
Clean/close director	R. Loos	6-4561	520-1189	6602
Subproject 6 project manager	Doug Kuhns	6-8226	521-5560	NA
Group 3 project manager	R. Lee Davison	6-3770	520-3707	5744
Field team leader	Mark Varvel	6-4424	520-6023	5945
Health and safety officer	L. McManamon	6-3658	521-8405	4903
Industrial hygienist	Cory Stolworthy	6-3430	NA	5656
Fire protection engineer	Doug Clark	6-6465	NA	9157
Clean/Close Project environmental compliance	Lee Tuott	6-7990	NA	7855
a. NA – not applicable.				

## **11. DECONTAMINATION PROCEDURES**

Every effort will be made to prevent contamination of personnel and equipment through the use of engineering controls, isolation of source materials, contaminant monitoring, personnel contamination control training, and following material handling requirements and procedures for contaminated or potentially contaminated materials. If contact with potentially contaminated surfaces cannot be avoided, then additional engineering controls, in combination with PPE upgrades, may be necessary to control the contact hazard. However, if chemical or radiological contamination is encountered at levels requiring decontamination, this section provides guidance on how it will be performed.

### **11.1 Contamination Control and Prevention**

Contamination control and prevention procedures will be implemented to minimize personnel contact with contaminated surfaces if such surfaces are encountered or may be contacted during project tasks. The following contamination control and prevention measures will be employed if contamination is encountered or anticipated:

- Identify potential sources of contamination and design containment, isolation, and engineering controls to eliminate or mitigate any potential for contact or release of contaminants
- Limit the number of personnel, equipment, and materials that enter the contaminated area
- Implement immediate decontamination procedures to prevent the spread of contamination if contamination is found on the outer surfaces of equipment
- Use only the established control entry and exit point from the contaminated area to minimize the potential for cross-contamination and expedite contamination control surveys
- Wear disposable outer garments and use disposable equipment where possible
- Use hold points defined in procedures and work orders to monitor for contamination where anticipated.

### **11.2 Equipment and Personnel Decontamination**

Personnel and equipment decontamination procedures are necessary to control contamination and to protect personnel should contamination be encountered. Both chemical and radionuclide contamination will be removed from surfaces of a contaminated area at the exit and other designated work area boundaries.

If radionuclide decontamination operations are required for equipment or areas, they will be performed in accordance with Chapter 4 of the Radiological Control Manual (PRD-183). Nonradionuclide decontamination will be evaluated by the HSO and project industrial hygienist, on a case-by-case basis, to determine the most appropriate level of PPE to be worn. An RWP will be generated if radiological contamination is encountered. Specific equipment and personnel decontamination methods are provided in the following subsections.

### **11.2.1 Equipment Decontamination**

If radionuclide decontamination operations are required for equipment or areas, they will be performed in accordance with Chapter 4 of ICP Radiological Control Manual. Nonradionuclide decontamination will be evaluated on a case-by-case basis by the HSO and project industrial hygienist to determine the most appropriate PPE. Level C protective clothing will initially be selected if airborne contaminants may be generated until site monitoring can demonstrate downgrading is warranted.

A decontamination pad may be established if nonradionuclide decontamination is required before equipment can be released. If it is deemed necessary and appropriate by the project industrial hygienist, a wet wiping with an amended water solution (e.g., amended with a nonphosphate detergent such as Alconox) or a potential steam cleaning of this equipment may be conducted before it is allowed to leave the decontamination area. A drainage system that allows for a single collection point will be established if steam cleaning is performed. Decontamination wastewater will be collected using a submersible pump and containerized and characterized in accordance with companywide Manual 17, "Waste Management," and relevant MCPs.

### **11.2.2 Personnel Decontamination**

Project activities will be conducted in Level D PPE unless upgrading is warranted. Engineering controls in conjunction with work controls and proper handling of samples will serve as the primary means to eliminate the need for personnel decontamination. If modified Level D protective clothing is required, all items will be inspected following the list in Section 5.

### **11.2.3 Decontamination in Medical Emergencies**

If a person is injured or becomes ill, that person will be immediately evaluated by first-aid-trained personnel (on a voluntary basis) at the project work site. If the injury or illness is serious, then the FTL/STR will contact the INTEC construction coordinator or WCC (if the construction coordinator cannot be reached) to summon emergency services (i.e., fire department and CFA medical services) to the project site.

Medical care for serious injury or illness will not be delayed for decontamination. In such cases, gross decontamination may be conducted by removing the injured person's outer protective clothing, if possible, and other contaminated areas may be contained with a bag or glove. If contaminated PPE cannot be removed without causing further injury (except for the respirator, which must be removed), the individual will be wrapped in plastic, blankets, or other available material to help prevent contaminating the inside of the ambulance, medical equipment, and medical personnel.

The industrial hygienist or RCT (depending on the type of contamination) will accompany the employee to the medical facility to provide information and decontamination assistance to medical personnel. Contaminated PPE then will be removed at the CFA medical facility and carefully handled to prevent the spread of contamination. The ICP Radiation Protection Manual (PRD-183), Chapter 5, and MCP-148, "Personnel Decontamination," contains information on proper handling of radionuclide-contaminated wounds.

## **11.3 Doffing Personal Protective Equipment and Decontamination**

As stated earlier, no personnel decontamination beyond doffing of PPE is anticipated for this project. Careful removal of the outer PPE will serve as the primary decontamination method.

The specific doffing sequence of modified Level D or C PPE, and associated decontamination procedures, will be based on the nature of the contamination. A general approach for doffing modified Level D or C PPE is described below. However, no one doffing strategy works for all circumstances. Modifications to this approach are appropriate if site conditions change or at the discretion of the project HSO in consultation with the project industrial hygienist and RCT.

#### **11.3.1 Modified Level D Personal Protective Equipment Doffing and Decontamination (if Required)**

If required to be worn, modified Level D protective clothing (e.g., disposable coveralls) will be doffed following standard radiological removal techniques (rolling outside surface inward and down) and will constitute the initial decontamination step. All PPE will be placed in the appropriately labeled containers.

#### **11.3.2 Level C Personal Protective Equipment Doffing and Decontamination (if Required)**

If respiratory protection is worn in conjunction with protective clothing (e.g., Level C PPE), then the modified Level D sequence will be followed with one additional step. That additional step is to remove the respirator and place it in a separate container from the discarded protective clothing. Depending on the type of contamination encountered, this step will be followed by a radiological survey or industrial hygienist evaluation.

### **11.4 Personnel Radiological Contamination Monitoring**

An automated whole-body radiological survey may be required before exiting the OU 3-13, Group 3 work sites, as determined appropriate by RadCon personnel or as stated in the RWP. If required, this survey will be conducted using an existing personnel contamination monitor or other available hand-held instrument as directed by RadCon personnel.

#### **11.4.1 Storage and Disposal of Investigation-Derived Waste Materials**

Waste may include PPE and miscellaneous sampling materials (e.g., paper towels, plastic bags, and gloves). If contaminated, the waste will be bagged, secured with duct tape, labeled, and discarded as directed by the RCT. It is expected that the waste will be handled as conditional industrial waste to comply with the waste disposal and disposition form. Free release surveys of suspected radiologically contaminated waste will be conducted in compliance with MCP-425.

Cold (nonradiological) waste is sent to the CFA Landfill or another ICP-designated solid-waste landfill. Low-level radioactive waste is stored in the radioactive material area of the designated CERCLA cargo container in accordance with MCP-3475, "Temporary Storage of CERCLA-Generated Waste at the ICP." The waste will be evaluated for additional characterization and managed as low-level waste. Final disposition will be coordinated with Waste Generator Services.

#### **11.4.2 Site Sanitation and Waste Minimization**

Site personnel will use the portable toilet facilities provided or other designated sanitation facilities in the INTEC area. Potable water and soap are available in these areas for personnel to wash their hands and faces upon exiting the DWA or CWA.

Waste materials will not be allowed to accumulate at OU 3-13, Group 3 sites. Appropriately labeled containers for industrial waste and CERCLA waste (as required) will be maintained at the project site, as stated in the Operable Unit 3-13, Group 3, Other Surface Soils Remediation Sets 1-3 (Phase I) Field Sampling Plan (DOE-ID 2004b) (Attachment 1 of the Group 3 RD/RA Work Plan submittal [DOE-ID 2004a]). Personnel should make every attempt to minimize waste through the judicious use of consumable materials. All site personnel are expected to make good housekeeping a priority at the job site.

## **12. RECORDKEEPING REQUIREMENTS**

### **12.1 Industrial Hygiene and Radiological Monitoring Records**

When Industrial Hygiene support is required, the industrial hygienist will record airborne monitoring and sampling data (both area and personal) collected for exposure assessments in the ICP Hazards Assessment and Sampling System database. All monitoring and sampling equipment will be maintained and calibrated in accordance with ICP procedures and the manufacturer specifications. Industrial hygiene airborne monitoring and sampling exposure assessment data are treated as limited access information and maintained by the industrial hygienist in accordance with ICP companywide safety and health manual procedures.

Radiological control personnel maintain records of radiological monitoring, daily project operational activities, and instrument performance checks in accordance with companywide Manual 15B, "Radiation Protection Procedures."

Project personnel or their representatives have a right to the monitoring and sampling data (both area and personal) from both the industrial hygienist and the RCT. Results from monitoring data also will be communicated to all field personnel during daily POD meetings and formal prejob briefings, in accordance with MCP-3003.

### **12.2 Field Team Leader and Sampling Logbooks**

Logbooks will be maintained in accordance with MCP-1194. The FTL will keep a record of daily site events in the FTL logbook and will maintain accurate records of all personnel (e.g., workers and nonworkers) who are onsite each day in a site attendance logbook. Logbooks must be obtained from the field data coordinator for the INEEL Sample and Analysis Management. The completed logbooks must be returned to the INEEL Sample and Analysis Management within 6 weeks of project completion. The logbooks are then submitted to ICP Document Control.

### **12.3 Document Control**

Document Control organizes and maintains data and reports generated by Clean/Close Project field activities. Document Control maintains a supply of all controlled documents and provides a system for the control and release of controlled documents, reports, and records.

Completed sample logbooks are submitted to Sample and Analysis Management within 6 weeks of project completion. All other project records and logbooks, except Industrial Hygiene logbooks, must be forwarded to Administrative Records and Document Control (ARDC) within 30 days after completion of field activities.

### **12.4 Site Attendance Record**

If required to be maintained separately, the site attendance record will be used to keep a record of all personnel (i.e., field team members and nonfield team members) onsite each day and to assist the area warden with conducting personnel accountability should an evacuation take place (see Section 10 for emergency evacuation conditions). Personnel will only be required to sign in and out of the attendance record once each day. The FTL/STR is responsible for maintaining the site attendance record and for ensuring that all personnel on the project site sign in (if required).

## **12.5 Administrative Record and Document Control Office**

The ARDC office will organize and maintain data and reports generated by ICP field activities. ARDC maintains a supply of all controlled documents and provides a system for the control and release of controlled documents, reports, and records. Copies of the management plans for the ICP, this HASP, the ICP Project Execution Plan (PLN-694), the Quality Assurance Project Plan (DOE-ID 2002), and other documents pertaining to this work are maintained in the project file by the ARDC office.



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